THE

PALESTINE EXPLORATION FUND.

NOTES AND NEWS.

Died, on Saturday, Dec. 26th, WILLIAM HEPWORTH DIXON, Chairman of the Executive Committee of this Society. It is now too late to do more than record this loss to the cause of Palestine research. We hope to set forth his services to the Fund since its foundation in the April *Quarterly Statement*.

IT HAS BEEN RESOLVED to begin the Special Edition with the issue of the great Map. This is now completed, and finally corrected proofs are in the hands of the committee. It is expected that the sheets will be delivered in London in March. They will then be sent out to the subscribers as rapidly as possible. Each Map will be placed in a strong and handsome portfolio, with title page and index sheet. The portfolios will be delivered to subscribers carriage paid.

The first volume of the Memoirs will probably be ready about the same time. There has been unavoidable delay caused by sending the proofs to Asia Minor. Colonel Wilson has now, however, begun to return them; the illustrations are in the engraver's hands, and the work will now be forwarded as fast as possible. The plans, drawings, and sketches will be bound up with the Memoirs, instead of forming separate volumes as at first proposed. The first volume consists of the first six sheets, and includes, roughly, the whole of Galilee. Lieutenant Conder has contributed a paper to the volume on the topography of Galilee. The Memoirs of the fifth sheet are also written by him; the rest of the Memoirs in this volume are the work of Lieutenant Kitchener.

Should any subscriber to the Special Edition be willing to give up his copies to public libraries or private persons, he is invited to inform the Secretary. A list has been made of names which arrived too late, to whom such copies may be ceded.

It has been further resolved that the great Map, in twenty-six sheets, shall be issued to the general body of the subscribers to the Fund in the summer, after the issue of the Special Edition is completed. The sheets will be coloured, placed in a strong portfolio, and forwarded carriage free, with index map, title page, and a small descriptive pamphlet, calling attention to the boundaries, principal features, ruins, &c., on each sheet. The price to subscribers will be two guineas, payable in advance to the secretary, to whom alone applications must be made. No trade discounts will be allowed on subscribers' copies.

In the autumn the Map will be issued to the general public, to be obtained of all booksellers, at the price of three guineas, in portfolio, and with the pamphlet, &c., as in the form issued to subscribers.

The Map of Eastern Palestine, executed by the American party, partly by reconnoissance, and partly by triangulation, will be issued at the same time as our own Map, in similar form—viz., in a portfolio, and with a descriptive pamphlet. It will consist of thirteen sheets. The price to subscribers will be one guinea; to the general public, a guinea and a half.

The first two sheets of the reduced Map are now ready; the American work will be incorporated with it, so that this Map will now represent the whole of Palestine. It will consist of nine sheets. The work is being pushed forward as rapidly as possible.

Dr. Chaplin writes from Jerusalem (Dec. 4, 1879):—"Some time ago the Tombs of the Kings were purchased by a French lady, and excavations of considerable interest have lately been carried on there. In the earth which filled a great portion of the rock hewn, sunken court in front of the entrance to the Tombs, have been found many capitals and other architectural remains, amongst them some stones, which show beyond question that they formed part of a pyramidal structure. There seems no reasonable doubt that these belong to the famous three pyramids of the monuments of Helena, and have been thrown down from above. A great marble statue, probably Roman, has been found a few minutes from the seashore, an hour and a half south of Gaza. It is a half figure, nose and right forearm broken off. I send you a tracing of a rough sketch received from a friend. In the Shephelah, an hour or more north of the Jaffa Road, a tomb has been brought to light. One of its stone doors has carving upon it in four panels, on two of which are representations of lions' heads, in two of bulls' heads. Probably the tomb is of Crusading origin. It has again been covered in. I had hoped to be able to visit it, as well as the statue below Gaza, but could not leave home. It is said that the statue is to be brought to Jaffa."

Colonel Wilson writes, as to his paper on the walls of the Haram enclosure, as follows:—

"The notes on the Haram wall were written two or three years ago as part of

a revised edition of the notes to the Ordnance Survey of Jerusalem. I was obliged, from pressure of other work, to lay the notes on one side, and have never been able to continue them. I have offered the notes as a contribution to the *Quarterly Statement*, hoping that they may be found useful in future discussions respecting the character of the masonry of the Haram wall.

"The plan I adopted in the notes was to give, in the first place, a description of each section of the wall from the 'Recovery of Jerusalem,' the *Quarterly Statements*, and other sources, and then to add such remarks as occurred to me; the facts are thus separated from the comments.

"It was my intention to embody in the new edition of the Ordnance Survey Notes a description of the excavations made by Captain, now Lieut.-Colonel, Warren at Jerusalem. The nature of those excavations, and the difficulties which Colonel Warren encountered and successfully overcame, have never been sufficiently appreciated by the public. Though I cannot always agree with the conclusions which he has drawn from the results of the excavations, I am glad to take this opportunity of expressing my sense of the great value and importance of his work at Jerusalem."

In order to publish Colonel Wilson's paper on the Haram masonry in full it has been found necessary to keep back several smaller papers, which will appear in the April *Quarterly Statement*. Among them is a reply by the Rev. W. F. Birch to the late criticisms on his recent papers.

We have received Part II., vol. ii. of the "Transactions of the German Palestine Exploration Fund," some portions of which we propose to reproduce in English form.

The income of the Fund from all sources, from September 17th to December 12th, 1879, was £434 16s. 3d. The general expenditure on rent, parcels, postage, salaries, and office, has been £160. All the "unpaid accounts" which have figured so formidably in the annual balance-sheets are now paid off.

It is suggested to subscribers that the safest and the most convenient manner of paying a subscription is by means of the bank. Among other advantages, this method removes the danger of loss or miscarriage, and saves the Society's office the labour and expense of acknowledgment by official receipt and letter. Money should never be sent by stamps, and when remitted by post-office orders or cheques, these *should in all cases be payable to order of Walter Besant, Esq. and crossed to Coutts and Co.*

The name of the author of the paper on the Tomb of St. Luke, published in the *Quarterly Statement* of October, 1878, was omitted. It was written by Mr. William Simpson, F.R.G.S.

The publications of the Society now in print are :—

1. The Recovery of Jerusalem. Third Thousand. 16/- to Subscribers.
2. Our Work in Palestine. Ninth Thousand. 3/6.
3. Tent Work in Palestine. Second Thousand. 17/6 to Subscribers.

The second of these contains a popular account of the excavations in Jerusalem, with the reasons and aims of the work.

A few copies still remain of Lieutenant Kitchener's Guinea book of Biblical Photographs. It contains twelve views, with a short account of each. The views are mounted on tinted boards, and handsomely bound.

Cases for binding the *Quarterly Statement* can be obtained of the Society's publishers, Messrs. R. Bentley and Son, at eighteenpence each. They are in green or brown cloth with the stamp of the Society.

The following are at present Representatives and Lecturers of the Society, in addition to the local Hon. Secs. :—

Archdeaconry of Hereford: Rev. J. S. Stooke-Vaughan, Wellington Heath Vicarage, Ledbury.

City and neighbourhood of Manchester: Rev. W. F. Birch, St. Saviour's Rectory.

Lancashire: Rev. John Bone, St. Thomas's Vicarage, Lancaster.

London: Rev. Henry Geary, 16, Somerset Street, Portman Square.

Norwich: Rev. W. F. Creeny.

Suffolk: Rev. F. C. Long, Stow-upland, Stowmarket.

Peterborough: Rev. A. J. Foster, Farndish Rectory, Wellingborough.

Worcester: Rev. F. W. Holland, Evesham (Member of General and Executive Committee, and one of the Hon. Secretaries to the Fund).

Diocese of Ripon: Rev. T. C. Henley, Kirkby Malham Vicarage.

North Wales: Rev. John Jones, Pwllheli, North Wales.

Yorkshire, Durham, and the North: Rev. James King, St. Mary's Vicarage Berwick. Mr. King has recently returned from the Holy Land; communications for lectures, &c., can be sent to the Office at Charing Cross.

Scotland.—Rev. R. J. Craig, Dalgetty, Burntisland.

While desiring to give every publicity to proposed identifications and other theories advanced by officers of the Fund and contributors to the pages of the *Quarterly Statement*, the Committee beg it to be distinctly understood that they

leave such proposals to be discussed on their own merits, and that by publishing them in the *Quarterly Statement* the Committee do not sanction or adopt them.

Annual subscribers are earnestly requested to forward their subscriptions for the current year when due, at their *earliest convenience*, and without waiting for application.

The Committee are always glad to receive old numbers of the *Quarterly Statement*, especially those which have been advertised as out of print.

Subscribers who do not receive the *Quarterly Statement* regularly are asked to send a note to the Secretary. Great care is taken to forward the periodical to all who are entitled to receive it, but changes of address and other causes give rise to occasional omissions.

It has been asked whether, since the Survey is finished, the *Quarterly Statement* will be discontinued. The Survey, as stated above, will be actually completed when it is entirely published, and not before. But its completion does not mean the completion of the work of the Society, as reference to the original prospectus will show. And there is, more than ever, need of a periodical devoted to the special line of research which is the *raison d'être* of this *Quarterly Statement*. it will therefore be continued as long as the Society exists and there is work of the kind which it represents to be done and reported.

DISCOVERY OF A STATUE NEAR GAZA.

THE following appeared in the *Pall Mall Gazette*, November 11th, 1879:—

"An interesting archæological discovery is reported from Palestine. An Arab who was quarrying stone the other day at a place about four miles and a half from Gaza unearthed a marble figure supposed to be a colossal god of the Philistines. The dimensions of the figure are as follows: 3 feet from the top of its head to the end of its beard, 27 inches from ear to ear, 13½ inches from top of forehead to mouth, 54 inches from shoulder to shoulder, 81 inches from crown of head to waist, and 54 inches the circumference of the neck. The total height of the figure is 15 feet. The hair hangs in long ringlets down upon the shoulders, and the beard is long, indicating a man of venerable age. The right arm is broken in half, while the left arm is crossed over the breast to the right shoulder, where the hand is hidden by the drapery of a cloth covering the shoulders. There is no inscription on the figure or the pedestal, which is a huge block carved in one piece with the figure. The statue was found in a recumbent position, buried in the sand, on the top of a hill near the sea. It had evidently been removed from its original site, which is unknown. Its estimated weight is 12,000lb. The Pasha

of Jerusalem has ordered a guard to watch this relic of ancient art, and to prevent any injury to it by the fanatics of Gaza."

See also Dr. Chaplin's letter on the same subject in *Notes and News*.

Lieut. Conder communicates the following notes on this discovery:—

"Gaza is mentioned in the Talmud as a place where Jews might live in spite of the idolatry of its inhabitants. A place called *Yerid* ('market') or *'Atluzah* ('meat market') existed outside the town, where an idol was worshipped (Abodah Zara i. 4, Jerusalem and Babylonian Talmuds).

Although Christianity was early introduced at Gaza (a Bishop Silvanus of Gaza is mentioned by Eusebius as early as 285 A.D.) idolatry kept its hold on the city as late as the fifth century. Porphyrius, the Bishop of Gaza, was authorised by the Empress Eudoxia to destroy the pagan temples and to erect a church in 406 A.D.

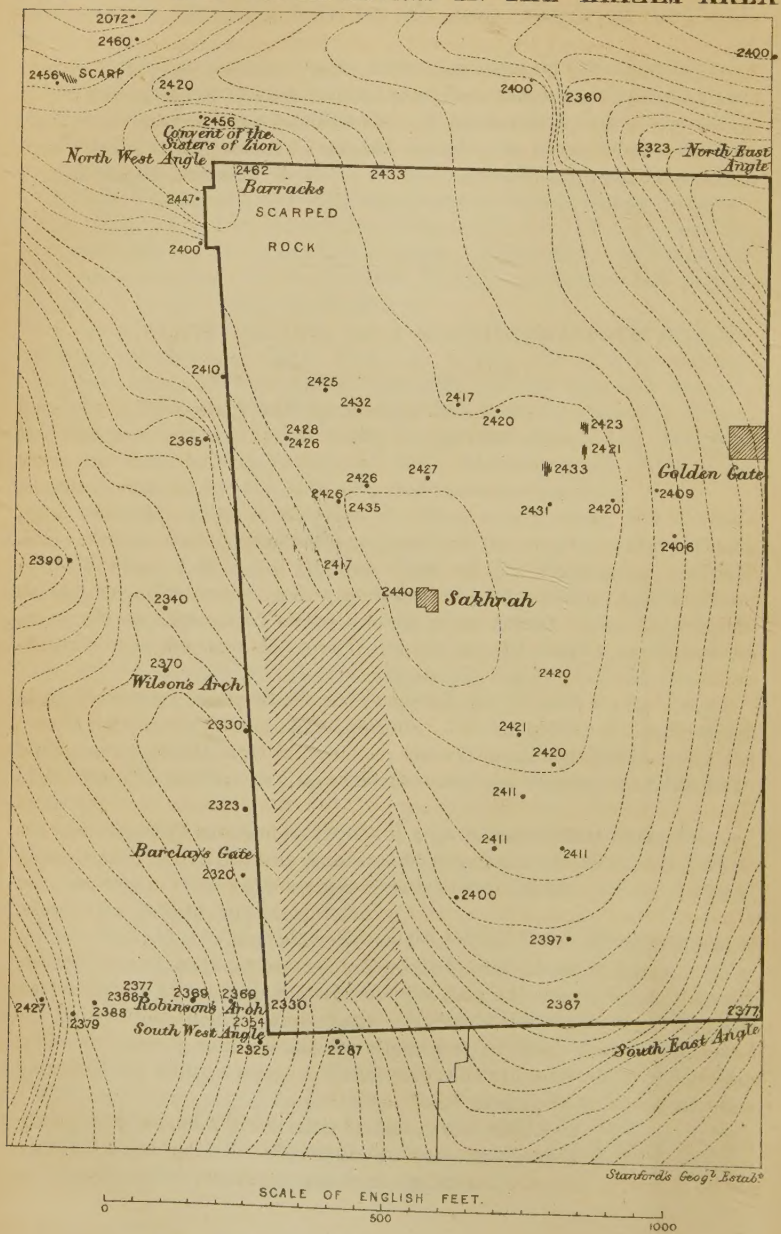
The temple outside the town was possibly the place called Bethelia mentioned by Sozomen (Hist. Eccl. lib. v. cap. 15) as a flourishing village near Gaza, having temples venerable both for age and beauty, especially a Pantheon standing on a hill like a citadel above the town. The village in question is no doubt the present *Beit Lahia*, standing on the sandhills $1\frac{3}{4}$ miles north of Gaza, and the great statue now discovered may have belonged to the Pantheon at this place.

The principal deity worshipped at Gaza was Marnas, the Cretan Jupiter. Zeus was also worshipped, and in the fourth century Gaza is said to have had eight temples (Life of St. Porphyrius, Bishop of Gaza, Acta Sanctorum, vol. v. p. 655). The Sun, Venus, Apollo, Proserpine, Hecate, and Juno were among these deities. The Temple of Marnas was round, and was considered one of the most magnificent in the world: it had a double cloister, apparently resembling the Dome of the Rock at Jerusalem. The church which Eudoxia built on its site was, however, cruciform, with thirty columns. Jerome speaks of the Temple of Marnas as overthrown in his own time (Comm. on Isaiah xvii. 3), but the final destruction was not effected until the beginning of the fifth century.

In the Pascal Chronicle (at 379 A.D.) a place called Tetramphodos, or 'Cross roads,' is noticed at Gaza, where was a marble statue of Venus above an altar. This may be the same as the market noticed in the Talmud (see Reland, vol. ii. p. 793).

The God Marnas is identified by Lenormant with the Moabite Hobal, who was represented as an old man with a long beard, holding a red stone in his right hand, and sometimes the seven arrows of fate (Ezekiel xxi. 21) without points or feathers. Hobal is called the male Venus, the Arabs worshipping among the planets only Venus and Jupiter, the latter symbolised by a stone. Hobal and Marnas were both the Lords of Fate, and were prayed to for rain. They answered to the old Greek divinity Uranus, and 360 smaller statues, symbolising the degrees of the celestial circle, are said sometimes to have accompanied their images (see Lenormant's Lettres Assyriologiques, No. 5).

PLAN OF THE ROCK LEVELS IN THE HARAM AREA



Note. *In the part shaded no rock levels have yet been fixed.*

It appears, therefore, that pagan worship survived at Gaza side by side with Christianity (supposing the bishops to have resided at their sees) as late as the fifth century A.D., and the resemblance between the description given of the new statue and the representation symbolic of Marnas, the god of Gaza, as an aged and long-bearded man, is so strong, that I would suggest to learned authorities that it is the statue which once stood in the principal temple of Gaza which has now been unearthed, perhaps after having been purposely buried at the time of the destruction of the temple by Porphyrius. C. R. CONDER, Lieut. R.E.

16*th November*, 1879."

THE MASONRY OF THE HARAM WALL.

By Colonel C. W. WILSON, R.E., C.B.

From the S. W. angle to Barclay's Gate.

THE ancient masonry at the south-west angle, and about fifty feet on either side of it, is the finest and best preserved in the wall, above ground, and has every appearance of being *in situ*. One of the corner stones, about 62 feet above the true foot of the wall, is 38 feet 9 inches long, nearly 4 feet thick, and 10 feet deep, and others are of scarcely less size. The bonding of the stones has been carefully attended to and the workmanship is admirable, but unfortunately the accumulation of rubbish and the bushes of cactus do not allow of its being seen to the same advantage as the south-east angle. The south-west angle is a right-angle.

Thirty-nine feet north of the corner is the fragment of an old arch, first brought to notice by Dr. Robinson, and now known by his name; portions of the three lower courses remain, and from the appearance and position of the stones they evidently formed part of the original wall; the upper stones have slightly slipped, and the surfaces of those taken from the soft *malaki* bed are so much weather-worn that the curve is almost lost. The arch is exactly 50 feet long, and the line of its springing is on a level, or nearly so, with the present surface of the ground; an offset of 1 foot 3 inches in the wall, which forms a sort of pier or buttress, is just visible.

From the arch northwards to Abu Sâûd's house, and within his house, where it can be seen, the wall is made up of a mixture of plain dressed stones and those having a marginal draft, but immediately beyond the latter, in a small yard to the south of the Wailing Place, the older masonry is again found in the shape of an enormous lintel, which covers a closed doorway known as "Barclay's Gate."

Bab al Maghâribé.

At the north end of Abu Sâûd's house, and partly over Barclay's Gate, is the Bab al Maghâribé, or Gate of the Western Africans, so called from its proximity to the mosque of

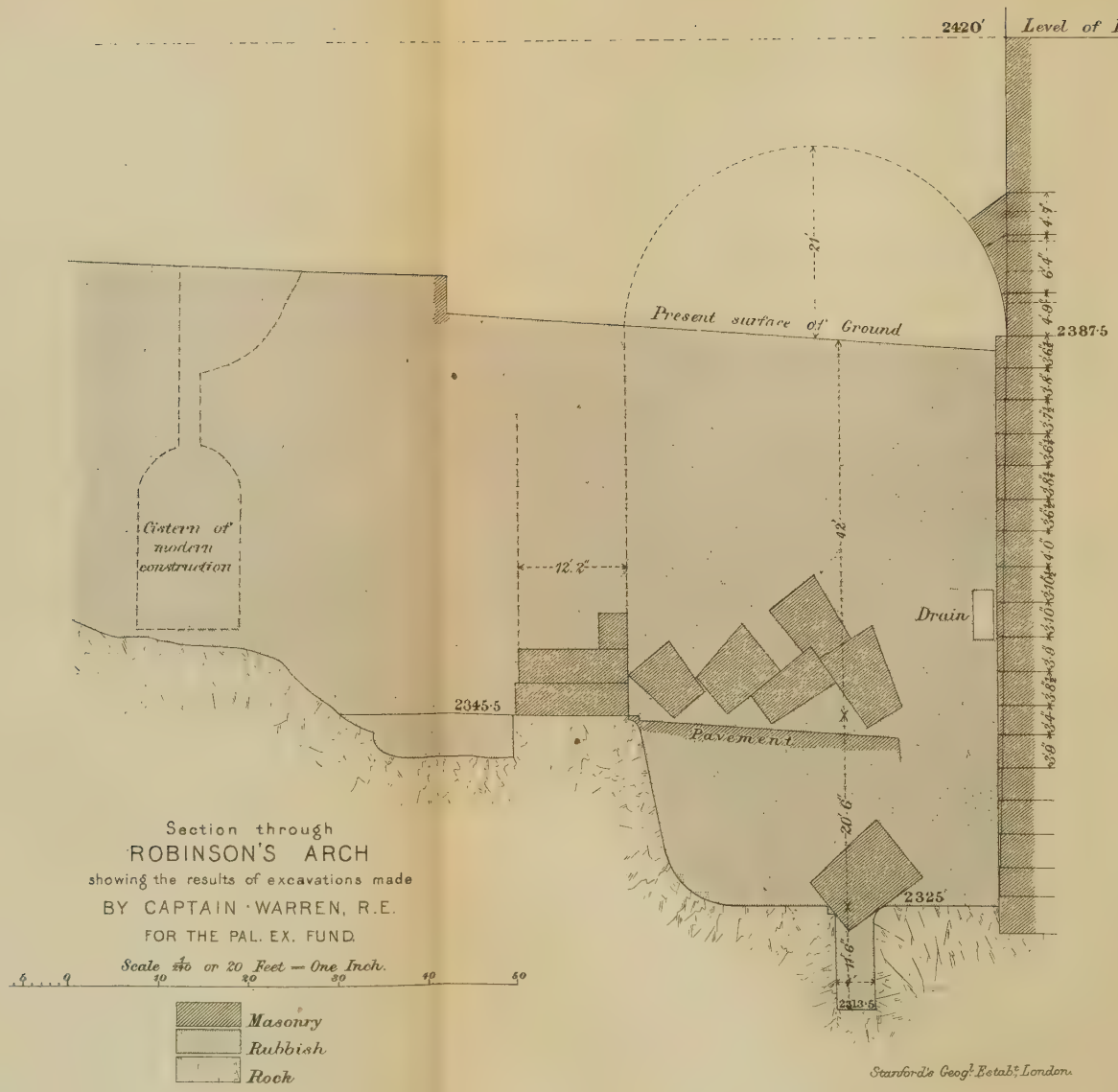
the same name. The sill of this gate is on a level with the Haram area, and the approach from the valley is by a steep ramp supported on arches, which bears no appearance of great age.

Haram Wall.

Above the ancient masonry at the south-west angle are several courses of large stones, plain dressed without marginal drafts, similar to those in the south wall west of the Khâtûnîyé, and in the west wall at the Wailing Place, but between the angle and Robinson's Arch they are replaced by courses of small stones, also plain dressed, of only half the height. The upper portion of the wall is here built of small stones with marginal drafts, and rough projecting faces, similar to those in a portion of the Citadel, with a proportion of plain dressed stones. Over Robinson's Arch there is a distinct change in the style of masonry, the stones with rough projecting faces cease abruptly, and the wall is almost entirely composed of thin courses of very small stones, plain dressed; north of the arch the larger stones without drafts again appear in the lower portions of the wall, and above them the masonry is of a mixed character. There is thus evidence of five periods of construction, which probably succeeded each other in the following order: the large stones with marginal drafts; the large stones plain dressed; the medium sized stones plain dressed; the small stones with marginal drafts and projecting faces; and the very small stones plain dressed, and mixed masonry.

Captain Warren was unable to excavate close to the Haram Wall at Robinson's Arch, but the lower portion of the masonry at that point was examined by a gallery driven into it from the west, and a shaft was sunk to a depth of about 46 feet at the south side of the south-west angle. It would appear that there are eighteen courses of drafted stones, from 3 feet 4 inches to 4 feet high, between the rock and the spring of the arch, giving a total height of about 62 feet 6 inches. The stones in the six lowest courses, below the level of a pavement described below, have their faces "rough picked," or "carelessly dressed," whilst those in the higher courses have their faces dressed like the stones in the Wailing Place; the drafts, beds, and joints being in either case of a similar character. The foundation stones were also seen at a point about 55 feet north of the arch, and in a passage a little south of the arch; and the upper masonry was traced almost as far north as Barclay's Gate, in a drain which runs along the Haram Wall, at a height of about 25 feet above the rock. The stones seen in the drain are said to be "similar to those above"—*i.e.*, like those at the Wailing Place. The pier or buttress alluded to above as projecting 1 foot 3 inches from the face of the wall, was probably formed by allowing the courses of stone to run up perpendicularly, or nearly so, from the rock, whilst each course in the wall itself is set back about one inch.* This feature is wanting at Wilson's Arch. It seems

* This view has been followed in the Section Plan 2; the offset appears to have escaped Captain Warren's notice.


2420' Level of Haram Area
Present surface of Ground
2387·5
Cistern of modern construction
12' 2"
42'
Drain
2345·5
Pavement
20' 6"
2325
11' 6"
2313·5
Section through
ROBINSON'S ARCH
showing the results of excavations made
BY CAPTAIN WARREN, R.E.
FOR THE PAL. EX. FUND.
Scale 1/240 or 20 Feet — One Inch.
Masonry
Rubbish
Rock
Stanford's Geog.l Estab.t London.

quite clear that the wall from the south-west angle to Barclay's Gate is of one date, though the stones with rough picked faces die out at some intermediate point not yet known.*

Robinson's Arch and Pier.

The arch has already been stated to be 50 feet wide, and it probably had a span of 42 feet, the same as that of Wilson's Arch. Captain Warren gives the span as "a trifle over 41 feet 6 inches," but this appears to have been measured at the foot of the pier, and a slight batter in the wall would give the additional six inches. The pier† is 51 feet 6 inches long, and 12 feet 2 inches thick, and rests on the rock 42 feet below the springing of the arch. Three courses, from 3 feet 6 inches to 4 feet high, were found on the eastern side and two on the western, and the stones are of hard *missœ*, dressed in a similar way to those at the Wailing Place. The construction of the pier is peculiar; on the eastern side the two first courses, 7 feet 3 inches high, form five small piers, about 5 feet long, with intermediate spaces of about 6 feet, over which the stones of the third course lie like so many great lintels, one stone being 13 feet 9 inches long. In the inside of the pier there is a hollow space about 5 feet wide, left, apparently, with a view of economising material. The second course on the western side is set back several inches, whilst the courses on the eastern side are flush with each other. The rock beneath the pier on the east is cut away perpendicularly, and on the west there is a rock-hewn channel along which Captain Warren drove his gallery.

Old Drain.

In a cistern, of no great age, built against the north end of the pier, an entrance was found to a drain which led directly to the Haram Wall and then branched north and south along it. The drain, which reaches nearly as far north as Barclay's Gate, is 165 feet long, 3 feet wide, and 2 feet high, and is built "of rubble with flagging on the top." The Haram Wall, as seen from the drain, "extends in one unbroken line" from the arch to Barclay's Gate. The drain is said to be a few feet above a pavement which stretches from the base of the pier of Robinson's Arch to the Haram Wall, and falls slightly to the east. The pavement is formed of slabs of very hard *missœ*, of considerable size, with polished surfaces, and upon it rest just as they fell, in lines north and south, the voussoirs of Robinson's Arch, which are from the *malaki* bed. Captain Warren thinks the pavement is probably the same as that at the south-west angle, and that it extends to Barclay's Gate; this may be the case, but it was only seen at a few points. The pavement rests on a mass of *débris* and old masonry, about 20 feet deep, and beneath this is the rock, its surface cut smooth and horizontal. At a distance of 12 feet from the Haram Wall there is a

Pavement.

* The questions connected with these stones are discussed below.

† In 1865 an excavation was made in search of this pier, and dropped directly down upon it, but there were no means available for following up the discovery.

Rock-hewn Channel.

rock-hewn channel, 12 feet deep and 4 feet wide, covered by an arch which, opposite the centre of the pier, has been broken by two large stones, apparently the voussoirs of an old arch that have fallen from above. One of the stones is much decayed, the other is 7 feet long, 5 feet thick at the extrados, 4 feet 4 inches at the intrados, and 4 feet high; in the middle of one side there is a joggle hole. No search appears to have been made for other voussoirs. The channel lies on the right bank of the ravine, and its general direction is north and south, but it is not parallel to the Haram Wall. Proceeding southwards from the two voussoirs there is, at 24 feet, a square rock-hewn cistern, covered by a segmental arch, whence a passage runs east to the Haram Wall, which, having apparently been built at a later period, cuts it in two; a second passage to the west, 3 feet wide, is closed by a fallen stone, and a third leads southwards to a circular rock-hewn cistern, 16 feet in diameter and 14 feet 4 inches high, with a flat roof of rock from 2 feet to 3 feet thick, which is pierced in the centre by a man-hole passing down from the pavement. Three feet above the floor of the cistern a rock-hewn passage, 8 feet high, 3 feet 9 inches wide, and covered by a "slightly pointed semicircular arch," runs off to the south-east and passes close to the angle of the Haram Wall, where it leaves the rock and is replaced by a smaller channel of masonry, 3 feet wide, which falls rapidly towards the bed of the ravine. After about 40 feet the channel turns suddenly to the south, and is continued as "a modern-looking drain" for a further distance of 59 feet, when it becomes silted up. North of the voussoirs the channel, 3 feet 9 inches wide, and covered with a "skew pointed arch,"* runs slightly away from the Haram Wall, and at 22 feet from the north end of the pier of Robinson's Arch, opens into a circular rock-hewn cistern, 12 feet 9 inches in diameter, and 14 feet high, which has its floor 3 feet below that of the channel. The roof is of rock, and is pierced by a man-hole leading down from the pavement.† This cistern is connected by a channel cut out of the rock, 4 feet wide and 14 feet long, with a similar one to the north-east, "of which only half is to be seen, as it is cut through by the foundations" of the Haram Wall. The channel now turns to the west, but almost immediately bending to the north again, it connects with a masonry passage,‡ 3 feet wide, 8 feet high, and covered by a semicircular arch, which extends northwards for 123 feet to a point nearly opposite Barclay's Gate, and

* The arch is made up of five stones; the chord to the east is about 22 inches, to the west 33 inches.

† North of the cistern, and partially overlying it, are two rock-hewn rectangular chambers, 16 feet long, 6 feet wide, and covered by semicircular arches; in one there is a flight of steps cut in the rock, and here was found the base of a column, figured on page 107 "Recovery of Jerusalem."

‡ In Captain Warren's drawings several man-holes are shown to lead upwards from this passage to the pavement, but they are not mentioned in the text.

about 14 feet from the Haram Wall. Here the passage is replaced by a narrow channel, 18 inches wide and roofed with flat stones, which runs off from the Haram Wall, and at a distance of 160 feet is cut in two by the wall of a house.

Lamps, weights, jars, an iron bar, and a stone roller, similar to those still used in some parts of the country for rolling the flat roofs of houses, were found in the channel, but none of these give any indication of its age.

Form of Valley. The section of rock exposed by the excavations beneath Robinson's Arch does not represent the true bed of the ravine, which lies more to the east, beneath the Haram Wall and at a much lower level, from 25 feet to 30 feet. The direction of the wall is not parallel to the course of the ravine, but crosses it at some point unknown, possibly near Barclay's Gate, where the level of the rock is 4 feet 6 inches lower than beneath Robinson's Arch; this may explain the absence of stones with rough faces north of Barclay's Gate, as the wall being then on the left bank of the ravine, they would be fully exposed to view. The rock appears to have been cut away below the east face of the pier, but the level surface at the bottom is probably natural, the top of one of the limestone strata in which the channel has been cut.

Deductions from Discoveries. The following remarks are offered as a possible explanation of what was found in this locality. At a very early period the channel, with its circular cisterns, which acted as so many collectors to store surplus water, was cut in the rock; the numerous man-holes show conclusively that the channel, which follows the right bank of the ravine, and at Robinson's Arch is 20 feet to 25 feet above its bed, carried sweet water, but the source of supply is unknown; it was possibly within the city, higher up the ravine.* At a much later period a covering arch was thrown over those parts of the channel left open to the air, and about the same time a viaduct was carried across the ravine at a low level, about that of the foot of the pier of Robinson's Arch, to facilitate communication between the low ground on the right bank and the eastern hill, up which there must have been a steep ascent. On Herod's reconstruction of the Temple the existing Haram Wall and Robinson's Arch were built, the hollows filled up with rubbish, and the pavement laid down on a level with the top of the highest course of stones with rough faces, which is also that of the rock beneath the pier. Before building the wall it would be necessary to remove the low-level viaduct, and in doing this two of the stones may have slipped and fallen on the covering arch of the channel. Captain Warren supposes† that rubbish

* The conduit may perhaps be connected with the great works of Hezekiah, when he "stopped the upper watercourse of Gihon and brought it straight down to the west side of the City of David" (2 Chron. xxxii. 30).

† "Recovery of Jerusalem," p. 110.

had accumulated to the height of the pavement, 20 feet 6 inches, before the Haram Wall was built by Herod, but this view necessitates the fall of the lower arch at a very remote date, then the accumulation of rubbish not only immediately below Robinson's Arch, but right across the bed of the ravine, where it would be 40 feet to 45 feet deep, and lastly, if the Haram Wall be not a mere shell, the removal of most of this rubbish when the solid substructure of the Temple was built. It seems more probable that Herod's architect, who conceived the bold idea of carrying the massive masonry across the ravine, intended, as part of his scheme, to fill up void spaces on the right bank, and finish off with a pavement.* If the approach to Barclay's Gate were by a ramp, as there seems some reason to believe, this ramp would form a natural termination for the stones with rough faces and the pavement on the north. The arrangement to the south is not quite so clear; the pavement went round the south-west angle, and at the side of the south wall it was 56 feet above the bed of the ravine, but whether the rubbish it covered was allowed to stand at its natural slope or was neatly finished off with a retaining wall is uncertain. Captain Warren's view that the non-existence of stones with rough faces north of Barclay's Gate points to two different periods of construction is hardly supported by the appearance of the masonry at a slightly higher level, which, as far as is yet known, is of exactly the same character from the south-west angle to Wilson's Arch. The fact that the voussoirs of Robinson's Arch lie directly on the pavement seems to show that the arch was destroyed during or immediately after the siege and capture of the City by Titus, and the rubbish probably began to accumulate at the same time. There is little to indicate the level of the rubbish at different periods, but it has been suggested† that during the Frank kingdom the level was that of the sill of Barclay's Gate.

Section across Valley.

The ground between the eastern and western hills was examined by a series of shafts sunk on a line drawn perpendicular to the Haram Wall from the centre of Robinson's Arch, and the following is a brief summary‡ of the results :—

Shaft I., 72 feet from the wall, was used for the examination of the fallen voussoirs of Robinson's Arch, a gallery being driven to the west at about 8 feet above the rock.

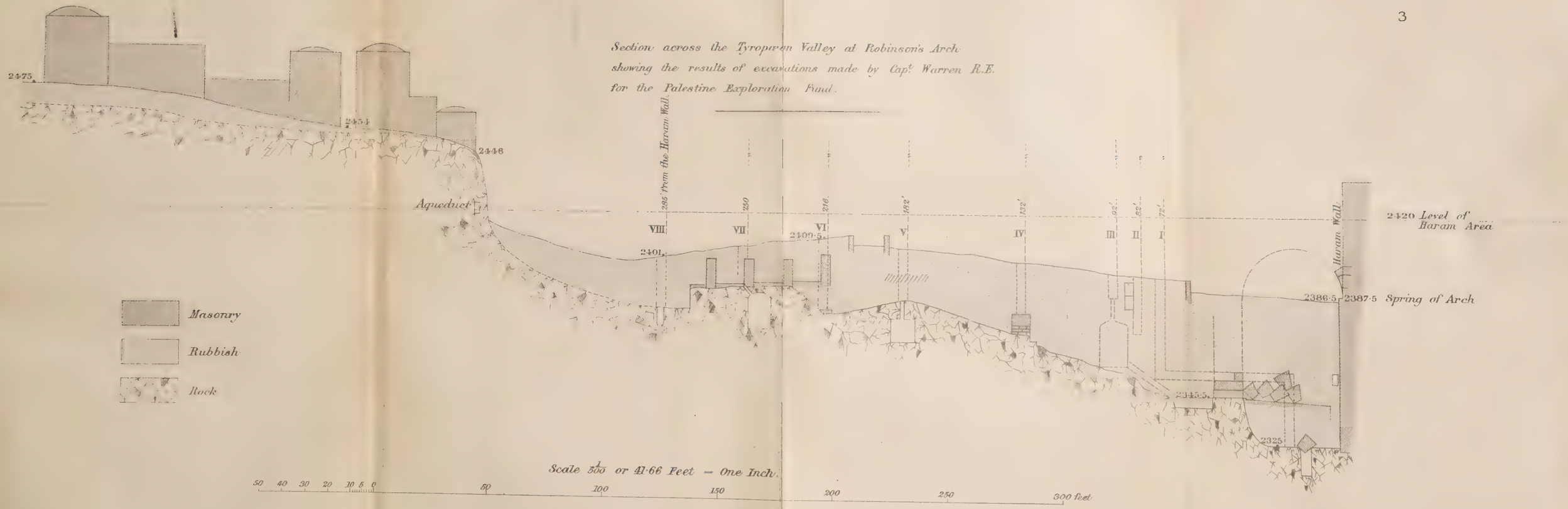
Shaft II., 82 feet from the wall. At a depth of 2 feet a small arch was found with sandstone *débris* beneath it; at 14 feet a passage or drain, and at 24 feet 6 inches the shaft was abandoned.

* Josephus appears to allude to such a filling in when he says (B. J. v. 5. 1) that "they brought earth and filled up the valleys, as being desirous to make them on a level with the narrow streets of the city." The pavement may possibly be the work of Agrippa (see Josephus, Antiq. xx. 9. 7).

† "Recovery of Jerusalem," p. 110, 111.

‡ For fuller details see "Recovery of Jerusalem," p. 95, 99, and Captain Warren's Letters in the *Quarterly Statements* of the Palestine Exploration Fund.

Section across the Tyropœon Valley at Robinson's Arch showing the results of excavations made by Capt. Warren R.E. for the Palestine Exploration Fund.



Stanford's Geog.l Estab.t London.

Shaft III., 92 feet from wall and 10 feet north of the general line of shafts; rock 40 feet 6 inches from the surface; passed through sandstone *débris*, and at 9 feet reached the mouth of a shaft 8 feet deep, opening into a vaulted cistern, 18 feet by 11 feet 6 inches, of modern construction. On breaking through the western side of the cistern the rock was found to be scarped for some feet north and south, and this may perhaps have been the position of the second pier of the viaduct, though no drafted stones or fallen voussoirs were found. From this cistern a staircase gallery was driven along the face of the rock to the pier of Robinson's Arch, the last 16 feet being in a curious cutting in the rock.

Shaft IV., 132 feet from wall; rock 30 feet from surface.* At 13 feet 6 inches the walls of a plastered chamber, which rest, at 21 feet 6 inches, on a wall running north and south, and this again rests, at 26 feet 10 inches, on a wall 15 feet thick, which runs east and west. The masonry of the last wall, though very ancient, has nothing in keeping with the Haram Wall. The rock beneath is scarped for four feet and then cut away as if for steps, possibly to receive the foundation stones of another pier.

Shaft V., 182 feet from wall; rock 22 feet from surface. At 12 feet the *débris* of a stone building, perhaps a continuation of that found in Shafts 6 and 7; at 22 feet the mouth of a rock-hewn cistern, 10 feet square, with a flat ceiling.

Shaft VI., 216 feet from wall; rock 32 feet from surface. At 12 feet the stones of a fallen arch, at 18 feet a limestone pavement, and beneath it *débris* of cut stone and the remains of a wall of well-dressed stone running north and south.

Shaft VII., 250 feet from wall; rock 18 feet from surface. At no great depth piers 3 feet by 4 feet† were found, built of "well-dressed ashlar of soft sandstone," and resting on the rock. The piers are 12 feet 6 inches apart, and supported arches, now fallen, and their height is about 12 feet from the floor to the springing. The ground to the north was not examined, but other piers were found to the east, as shown in the Section 3. The flooring is of well-dressed limestone flagging, and was found to be much disturbed. In one of the piers is a small door leading to a cylindrical rock-hewn cistern.

Shaft VIII., 285 feet from wall; rock 21 feet 6 inches from surface. The rubbish is described as being "common garden soil;" the shaft bared the slab covering the main drain of the city, which is 6 feet high, 3 feet wide, and cut out of the rock. The drain runs out by the Dung

* There are certain discrepancies between the rock levels in the "Recovery of Jerusalem" and the Lithographs and Letters published by the Palestine Exploration Fund. That given in Capt. Warren's Progress Report, No. V., September 12th, 1867, has been adopted above and in the section.

† Letter I., August 22nd, 1867, to Palestine Exploration Fund. The "Recovery of Jerusalem" gives 2 feet by 3 feet.

Gate,* where it is uncovered, and is probably that by which the *fellahin* entered the city during its occupation by the Egyptians under Ibrahim Pacha.

Remarks on Results of Excavations.

The rock features as disclosed by the excavations are shown on the Section 3. They present the appearance of gently shelving ground from the foot of the cliff on which the houses of the present Jews' quarter are built to the pier of Robinson's Arch. There are, however, two marked depressions, but how far these are natural or artificial is uncertain, the rock surface being much cut away in places. The sandstone piers, built of material which must have been brought from the Jordan Valley,† are rather puzzling. Captain Warren ‡ thinks that they formed part of the Xystus, but against this view may be urged the great height of the piers, 12 feet, and the traces of piers found, apparently, in Shafts II., III., and V., resting on from 10 feet to 30 feet of rubbish, and directly in the line of approach to Robinson's Arch. It is not known whether there are any piers to the north of the line of shafts, and until this question is settled it would perhaps be safer to look upon the remains as those of a bazaar or other building erected during the period of the Frank kingdom. The excavations unfortunately throw no light on the character of the roadway over Robinson's Arch. The brow of the cliff beneath the Jews' quarter being 26 feet higher than the level of the Haram, it is quite certain that there was never a continuous viaduct across the valley; but a broad flight of steps, carried on arches, from the valley would form a grand approach to the Royal Cloisters which ran along the south wall, and be a very probable arrangement. This may possibly be the fourth gate of Josephus which "led to the other city, where the road descended down into the valley by a great number of steps, and thence up again by the ascent." § When it is remembered that the great pier of Robinson's Arch has only

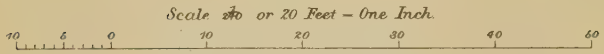
* The sewage, after passing the Dung Gate, is now used for manuring the gardens. Captain Warren supposes ("Recovery of Jerusalem," p. 95) that the sewer runs on "until it opens out on the side of the hill above the Kedron, only a few feet south of the Fountain of the Virgin;" but if this is the case now it could not have been so formerly, as the great central ravine intervenes. There seems every reason to believe that this was the main drain of that portion of the ancient city situate on the western hill, and its natural course would be to follow the right bank of the ravine to the bed of the valley, where the sewage was probably utilised in the king's gardens. The drain which opens out near the Fountain of the Virgin was possibly the main sewer of the eastern hill. Unfortunately there is no plan of it.

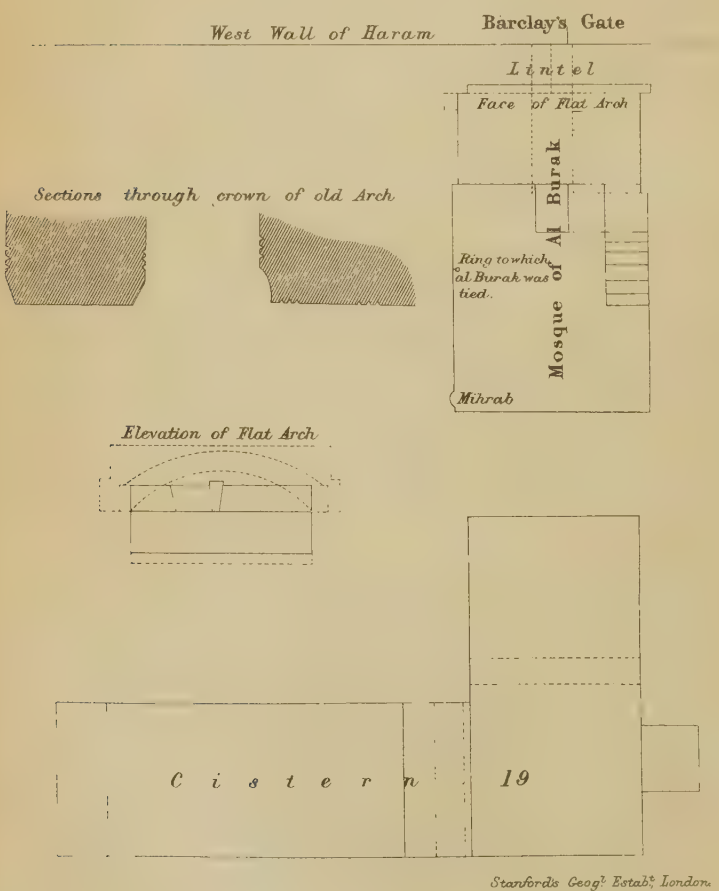
† The Jericho of Herod appears to have been built of this soft, friable sandstone, and it was also extensively used by the Crusaders in certain places. The old quarries in the Jordan Valley may still be seen.

‡ "Underground Jerusalem," p. 70.

§ Antiq. xv. 11. 5.

BARCLAY'S GATE, MOSQUE OF AL BURAK AND CISTERN 19.





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two complete courses left, the disappearance of the remaining piers, which stood on higher ground, need not create surprise.*

Barclay's Gate. The great lintel covering the closed entrance to the Haram, commonly known as "Barclay's Gate," † is visible in a small courtyard immediately south of the Wailing Place, and in one of the chambers which support the ramp leading to the Bâb al Maghâribé. The entire lintel cannot be seen, but it is 6 feet 10 inches high, and its measured length is 20 feet 1 inch. The total length must be about 24 feet 8 inches. The entrance is closed with coarse rubble, and above the lintel the Haram Wall is built with small stones plain dressed. Adjoining the lintel on the north there are four courses of large stones with marginal drafts, and at the Wailing Place two additional courses ‡ can be seen. Above the latter there are four courses of stones with plain dressed faces, and then the wall is finished off with small stones plain dressed. There are several holes in the wall, which seem to indicate the existence, at some period, of a row of vaulted chambers similar to those south of the Pool al Burak.

Wailing Place. The Wailing Place has always been considered part of the original retaining wall of the Temple enclosure, but the carelessness of the building and the frequent occurrence of coarse open joints makes it almost certain that the stones are not really *in situ*, and that this section of the wall is a reconstruction with old material. Many of the blocks are much worn by the weather owing to their softness or to their not having been set on their quarry beds. The material, too, is of very unequal quality; some is from the best *missæ* beds, as that used in the second course from the bottom, which is admirably finished and well preserved, but above and below this course there are many stones from the soft *malaki* beds and from the upper *missæ*, which contains a number of small nodules and disintegrates rapidly. The photograph, "Detail of Masonry at Wailing Place," shows the different kinds of stone used and some of the blocks set on edge.

* The following are the principal levels:—

Brow of cliff under Jews' quarter	about	2,446·0 feet
General level of Haram area	,,	2,420·0 ,,
Spring of Robinson's Arch	,,	2,387·5 ,,
Level of ground at Robinson's Arch ...	,,	2,386·5 ,,
Level of rock at Robinson's Arch ...	,,	2,325·0 ,,

† From its discoverer, Dr. Barclay, an American missionary.

‡ The chiselled drafts are here from two to four inches broad and one quarter to three-eighths of an inch deep, and the faces of the stones are all finely worked. The Wailing Place is so well known that it has been found convenient to adopt its highly-finished masonry as a standard of comparison for ther sections of the Haram Wall.

Masonry below the Surface of the Ground.

The wall beneath the present surface of the ground was examined by a shaft which was sunk seven feet north of the jamb of Barclay's Gate. The bottom of the lintel proved to be 78 feet 6 inches above the rock, and this height is made up of twenty-two courses of stone, from 3 feet 3 inches to 3 feet 11 inches high. The bottom course is let into the rock, and each course is set back about half an inch as the wall rises. The stones are similar to, but in a much better state of preservation than, those of the Wailing Place, and with one exception the upper drafts are slightly broader than the lower. The sill of the gate is about 28 feet 9 inches below the bottom of the lintel. The exact height could not be ascertained, as the sill course was broken.

The Rubbish.

For about 23 feet the shaft passed through "hard earth mixed with large stones," and about nine inches below the sill course of the gate came upon the flat roof of the same drain which was met with above the pavement at Robinson's Arch: 2 feet 4 inches wide, and 5 feet 6 inches high. Below the drain there is a wall of heavy masonry, faced with well-dressed stones without drafts, which is perpendicular to, and abuts on, the Haram Wall. A gallery driven through the wall showed that it was a retaining wall six feet thick, apparently built of squared stones throughout, but with no southern face. The wall is not continued downwards to the rock, but rests on seven feet of rubbish. For the last thirty feet the shaft was sunk through "hard earth and broken cut stones, many of them 1 foot 6 inches by 3 inches by 2 inches," and the rock at the bottom, cut horizontally, appears to fall to the west.*

Approach to Barclay's Gate.

It is just at this point that the position of the bed of the ravine becomes of some interest, but unfortunately the excavations do not throw much light on the subject, and it is uncertain whether the bed is to the east or to the west of the Haram Wall. The latter, however, seems most probable. The original approach to Barclay's Gate would appear to have been by a solid ramp across the ravine, but the information is not full enough to render this certain.

Ancient Passage.

The entire gate or entrance cannot be seen, but it was evidently about 18 feet 10 inches wide, and 28 feet 9 inches high, the sill being about 49 feet 9 inches above the rock. Immediately behind the closed entrance is the Mosque of Burak, which is reached by a flight of steps leading down to it from the western cloisters of the Haram area. This mosque marks the line of the passage which gave access to the Temple platform, and part of the original covering arch can be seen. The western portion of the chamber is covered by a solid segmental arch, of fine workmanship, with a simple moulding on its eastern face; the eastern portion by an elliptical arch built with smaller stones, but of greater height and

* This is stated in a note on one of Captain Warren's original drawings.

Section, parallel to the West Wall of the Haram, through Cisterns 19 and 20, showing the remains of an Ancient Passage and the presumed lie of the Rock.

Stanford's Geogl Estabt London.

span than the segmental one. The inner face of the lintel is almost concealed by a flat arch, apparently intended to take off the unpleasant effect which a massive stone would have on the eye at the end of a vaulted passage. The steps leading to the Haram area are comparatively modern, and a portion of the segmental arch has been cut away to form the upper ones. In the mosque is shown the ring to which Muhammed is said to have fastened his steed, Al Burak, on the occasion of his famous night journey. The entrance is called by some writers the "Gate of Muhammed," but this name was not known to the Sheikh of the Haram.

At the end of the mosque there is a space of about 11 feet filled in solidly with rubbish, and then the original passage is again found in Cistern No. 19, east of the Bâb al Maghâribé. The passage runs east, in continuation of the line of the Mosque of Burak, to a sort of vestibule, and then turns south at right-angles to its former course, and parallel to the Haram Wall. The passages are covered by segmental arches of similar construction to that noticed in the mosque, and with the same sort of moulding on their faces; the vestibule has a well-built domed roof, in the centre of which is a circular opening, originally intended to admit light, but now forming part of the shaft of the cistern; in the north wall of the vestibule there is a recess, which may possibly be the closed entrance to a passage. The stones of the dome and of the segmental arches are finely dressed and set without mortar. The springing line of the arches covering that portion of the passage running east and west is horizontal, but that of the arch covering the portion running north and south rises to the south at about 1 in 20. The sides of the cistern are thickly coated with cement, and the rubbish at the bottom has been levelled in steps or benches and then covered with cement.

A little to the south of the southern branch of the passage is Cistern No. 20, 40 feet wide, and 54 feet long, with a vaulted roof supported by piers. The walls are so thickly coated with cement that the character of the masonry cannot be seen; the piers and the greater portion of the vaulting are comparatively modern, but along the western side are the remains of an old covering arch of no great span. The west wall of the cistern is parallel to the Haram Wall, and in prolongation of the west wall of the passage, so that it evidently formed part of the approach to the Temple platform.*

* In 1864–5 the depth of water in these cisterns was so great that I was unable to visit them, but on my return to the city in 1866, being much impressed with the importance of examining the south-west corner of the Haram, I determined to descend both. At that time there were two feet of water in the cisterns, and the entrances being rather difficult, I could not induce any one to accompany me and assist in making the measurements. The horizontal measurements and the bearings of the several sections of the passage are sufficiently accurate, but the vertical distances were estimated, and are therefore liable to correction.

Original Form of Passage.

It would seem that originally the passage from Barclay's Gate, nearly 19 feet wide, ran in on a level for about 67 feet, when it entered a vestibule about 19 feet square; and that from the south side of this vestibule another passage of the same width, and rising at a slope of about 1 in 20, led off to the south at right-angles to the former one. It is uncertain whether the ascent to the south was by a ramp or by steps, and there is nothing to show how the passage was finished off. The latter may have continued in a straight line, and terminated in a well with a flight of steps, which would in this case have reached the surface near the Royal Cloisters, or it may have run into a large vaulted chamber whence there was an ascent eastward, by a flight of steps, to the Temple Court.*

A few words on the peculiar form of the passage will not be out of place here. It is obvious that the architect must have had some reason for changing the direction to the south, as the most natural arrangement would have been a straight passage rising by a gentle slope to the level of the area, similar to that which runs up from the Double Gate in the south wall. The most probable cause of the change of direction would seem to be the presence on the east of the thick bed of *malaki*, in which the cisterns of the Haram are excavated. This *stratum* lies at about the level of the passage, and would form, as it does elsewhere, a steep escarpment of rock. It is also possible that the change was due to the existence of the original retaining wall of Solomon's Temple, which it was not thought necessary to remove when the area was enlarged by Herod.

Vaults north of Wailing Place.

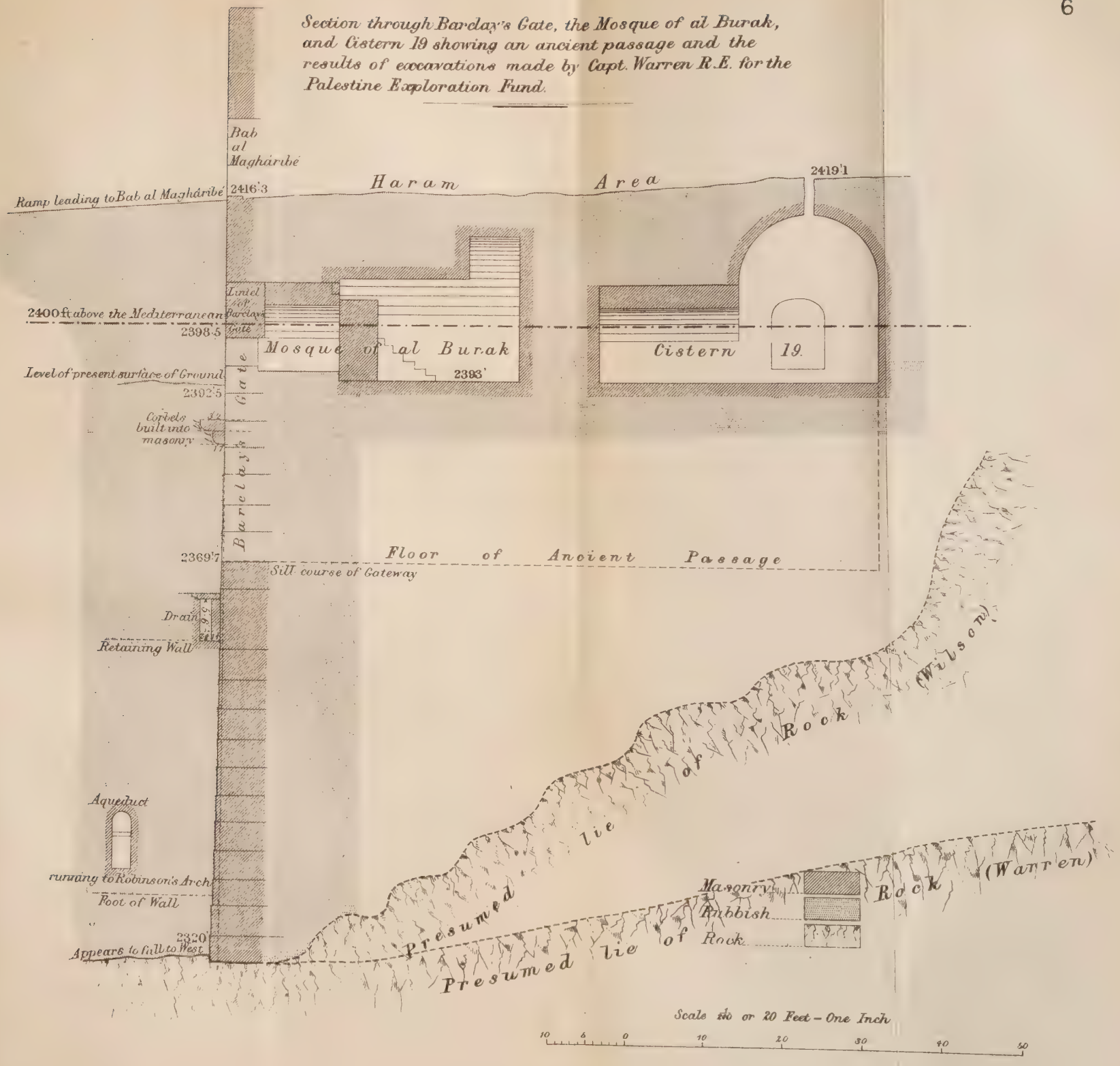
In a small garden† immediately north of the Wailing Place the same style of masonry as that described on p. 18 is found, and it can be traced, at intervals, in the vaults beneath the Mahkama, or Court House, to the edge of the Pool "Al Burak," which extends northwards along the Haram Wall for a distance of about ninety feet. These vaults are reached from the garden by an arched opening in the south wall of the Mahkama. They have pointed ragwork arches, and the seats of the groins have, where necessary, been cut out of the Haram Wall. From

* The following are the levels of the principal points :—

General level of Haram area	2,420·0	feet.
Bottom of lintel	2,398·5	,,
Level of present surface of ground	2,393·0	,,
Floor of passage (top of sill course)	(about) 2,369·7	,,
Top of retaining wall	2,362·0	,,
Bottom of retaining wall	2,327·6	,,
Level of rock	2,320·0	,,

† From this garden there is a good view of the south wall of the Mahkama, which is faced with drafted stones, and abuts on the Haram Wall with a straight joint. The masonry is interesting from its fine character and the illustration which it affords of the better class of mediæval work.

Section through Barclay's Gate, the Mosque of al Burak, and Cistern 19 showing an ancient passage and the results of excavations made by Capt. Warren R.E. for the Palestine Exploration Fund.



Stanford's Geog.l Estab.t, London.

the second chamber a low doorway leads off to a series of vaults to the west, and a narrow opening in the north wall gives access to the Pool "Al Burak." The southern end of this pool is covered by a segmental arch of good masonry, on which the north wall of the Mahkama rests. The east skewback is cut out of the Haram Wall, and on the haunches of the north side of the arch are corbels, which may have supported a continuation of the "secret passage" described below (p. 24). Beyond is a trimmer arch, of inferior masonry, and then Wilson's Arch, which is semicircular, and has a span of 42 feet and a width of 43 feet. The remaining portion of the pool is covered by an arch of smaller span, which is apparently slightly pointed. The masonry in the latter case is inferior ragwork, and the east side of the arch rests on an abutment of rubble masonry five feet thick, which entirely conceals the large stones of the Haram Wall. At the north end of the pool a flight of steps leads up to a door closed with loose masonry, which was broken through in 1865 in an unsuccessful attempt to reach and examine the Haram Wall to the north. On passing through the doorway the workmen came upon a wall of solid, well-set masonry of comparatively modern date, into which they penetrated twelve inches. The noise made during the excavation had, however, alarmed the family of a Moslem effendi living in a house opposite the Mahkama, and as this gentleman stated that the workmen were breaking into the cistern which supplied his house with water, the work was stopped and the hole closed up.

Pool Al Burak.

Masonry from the Wailing Place to Wilson's Arch.

A considerable portion of the Haram Wall is exposed to view above the floor of the pool Al Burak, and beneath the floor it was examined by a shaft sunk immediately under the south end of Wilson's Arch. There are twenty-one courses of drafted stones, from 2 feet 10 inches to 4 feet 1 inch high, which give the crown of the arch a height of 72 feet 9 inches above the rock, or of 75 feet 6 inches above the bed of the first course, which is let 2 feet 9 inches into the rock, and rests on hard *missœ*. The second course is set back six inches, and the others from 1 inch to 2½ inches. The fourteenth course has been cut away to a depth of 1 foot 6 inches, possibly to receive the skewback of an arch.

The face of the Haram Wall, where concealed by rubbish, between the Wailing Place and Wilson's Arch, was partially examined by a gallery driven to the south, from the shaft mentioned above, at a height of 27 feet above the rock, and by a shaft sunk to a depth of 17 feet at a point 18 feet south of the southern end of the Pool. In neither gallery nor shaft was any trace found of a break in the continuity of the wall, and it may be inferred that no such opening as that at Barclay's Gateway exists in this section of the wall.

The wall exposed in these excavations is evidently *in situ*, and the stones are "similar to, but in a much better state of preservation than,

those in the Wailing Place." Captain Warren thinks it "is probably one of the oldest portions of the sanctuary now existing." *

Wilson's Arch.

Wilson's Arch lies immediately in front of the gates as Salâm and as Silsilé, and the roadway passing over it is about 80 feet 6 inches above the rock. To the south is the Mahkama, a large building about 90 feet from north to south and 80 feet from east to west, separated from Wilson's Arch by the trimmer arch mentioned above (p. 21). The great arch, 42 feet span, is made up of twenty-three courses of stones of equal thickness, which cause an almost painful appearance of regularity. The stones, from 7 feet to 12 feet in length, are not as large as those in Robinson's Arch, but from their perfect state of preservation they form one of the most remarkable remains in Jerusalem.† Here, as at Robinson's Arch, the stones of the first three courses form part of the Haram Wall, and must be ascribed to the same date as the section of wall extending southwards to the Wailing Place. Captain Warren believes from the shape of the voussoirs that the arch is of a date "not earlier than the fifth or sixth century," but the form of the voussoirs alone seems hardly sufficient to determine the date.‡

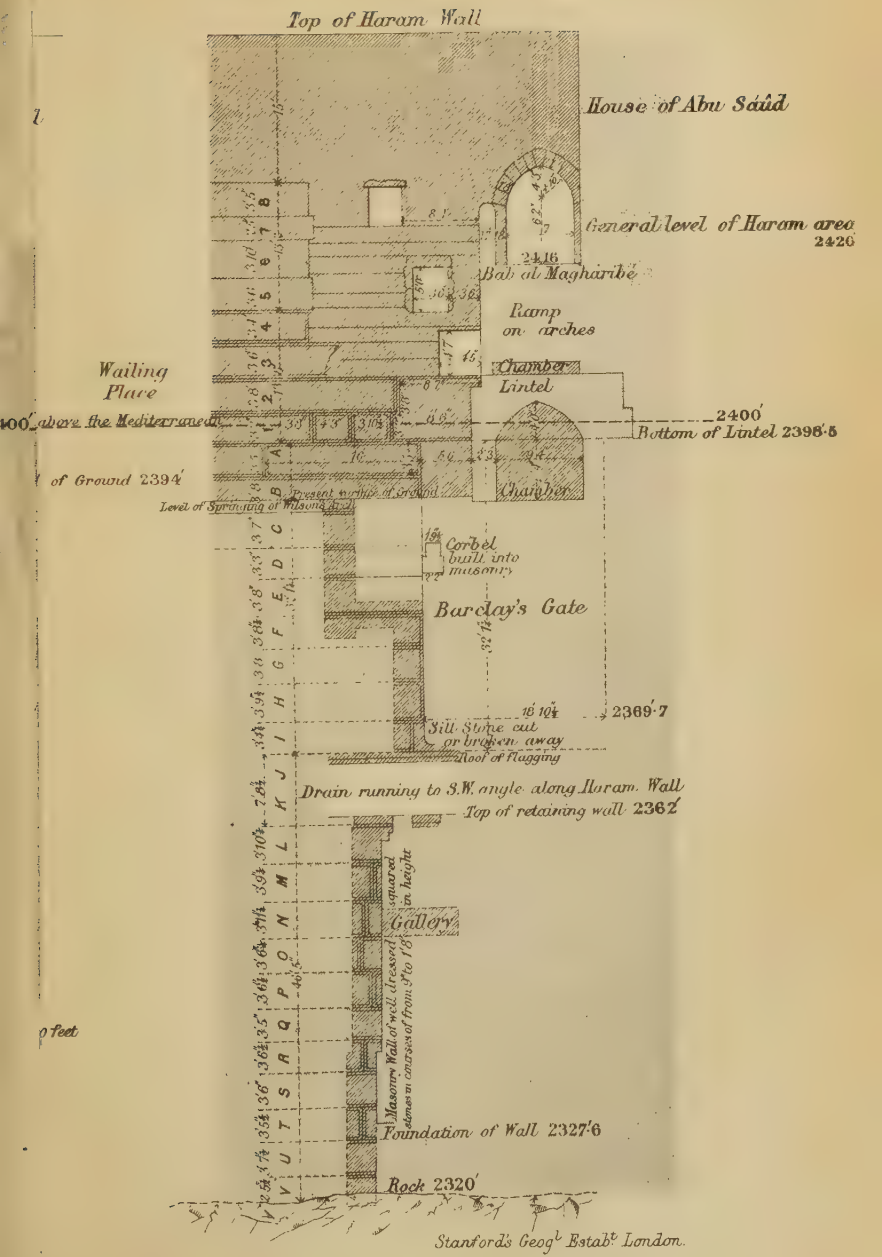
The western pier was examined by a shaft 7 feet from the south end of the arch, and was found to consist of two walls, 10 feet and 4 feet thick, of different kinds of masonry, separated from each other by a space of 6 inches, so that the total thickness of the pier at this point is 14 feet 6 inches. It would appear that the pier is 4 feet wider at the northern end, but the exact amount of divergency is not certain, nor whether it occurs in the 10 feet or 4 feet wall. The former is built of dressed stone, the latter of rubble. The east face of the pier for 25 feet below the springing of the arch is built of large stones with plain

* Captain Warren thinks the Greek or Roman foot was used in building the Haram Wall, "as the stones generally are in measure multiples of our English foot nearly."—Letter XVII., November 22, 1867, *Quarterly Statement*, Palestine Exploration Fund.

† At some distance from the ground on each side is a row of square holes left open when the centering was removed, and there is a hole in one of the voussoirs through which water was formerly drawn.

‡ The Pool of al Burak was discovered by Dr. Tobler, but he does not appear to have descended into the pool on the occasion of his first visit, or to have noticed the great causeway arch. The existence of the pool was sufficient evidence that there must be a covering arch, and one is shown by De Vogüé ("Temple de Jérusalem," Pl. I.), but the character of the arch and its importance were, I believe, unknown until my visit in 1864.

The arch is twice mentioned in "La Citez de Iherusalem": in ch. ii., "A main senestre sor le pont a un mostier de Saint Gille," and again in ch. xvi., "La rue a main senestre si va droit a une posterne, c'on apele la posterne de la tanerie, e va droit par desos le pont" (Descriptiones Terræ Sanctæ ex sæculo viii., ix., xii. et xv., by Titus Tobler). The last passage shows that the street from the Damascus Gate to the Dung Gate at that time passed under the arch.


Top of Haram Wall
House of Abu Sáúd
General level of Haram area
2426
Bab al Magharibe
Ramp on arches
Wailing Place
Chamber
Lintel
2400'
Bottom of Lintel 2396·5
Chamber
Present surface of ground
Corbel built into masonry
Barclay's Gate
2369·7
Sill Stone cut or broken away
Roof of Flagging
Drain running to S.W. angle along Haram Wall
Top of retaining wall 2362'
Gallery
Masonry Wall of well dressed stones in courses of from 9 to 18" in height
Foundation of Wall 2327'6
Rock 2320'
Stanford's Geogl Estabt London.

chiselled faces similar to those above the drafted stones in the Wailing Place, and thence to the rock, a depth of 19 feet 3 inches, of large rough boulders in courses, the stones projecting here and there in such a manner as to lead to the belief that they were not intended to be seen above ground. There are seven courses of dressed stone from 3 feet to 4 feet 2 inches in height, and in the three lowest there is a recess, 6 feet wide, 9 feet 5 inches high, and 5 feet deep, somewhat similar to those in Robinson's Arch. Some grooves cut in the stone would seem to indicate the existence, at one period, of a gate. A partial examination of the west face of the pier was made in the causeway vaults, where it was found to be of common rubble masonry, and to have a recess 5 feet 6 inches wide and 2 feet 9 inches deep above and a little to the north of the recess in the eastern face. The excavations were unfortunately not carried far enough to determine the nature of that portion of the pier faced with rough boulders. It may be a solid mass of masonry 14 feet 6 inches thick, or be formed by two walls together making up that thickness, and it is uncertain whether the boulders are set in mortar or not. It is also possible that part of the pier, towards the north, may be built of dressed stone from the rock upwards.*

The Rubbish. The floor of the pool beneath the arch consists of a bed of concrete 3 feet 6 inches thick, formed of stones about 3 inches cube, set in a hard, dark cement made up with tow; below this there is black soil to a depth of 17 feet, and then a stratum large of stones, about 8 feet thick, "apparently the voussoirs and drafted stones of a fallen arch and wall," which dips eastward, at a slope of 1 in 14, from the pier to the Haram Wall. The drafted stones are said to be similar to those in the wall. The large stones rest upon black soil, which extends down to a thin bed of red mud and rough stones overlying the rock. At a distance of 23 feet from the south end of Wilson's Arch, and 27 feet above the rock, a wall of well-dressed stones, lying east and west, abuts on the Haram Wall, and immediately south of this is a fragment of pavement extending to a wall nearly under the south wall of the pool "Al-Burak," a distance of 11 feet. The peculiar angle at which the fallen arch stones lie seems to indicate that at the time they fell the ground was rough and unlevelled, but no data exist for comparing them with the voussoirs of Robinson's Arch or with the stones in the Haram Wall. The fragment of pavement may have been a continuation of that seen at Barclay's Gateway, but if so its entire disappearance towards the north is remarkable.

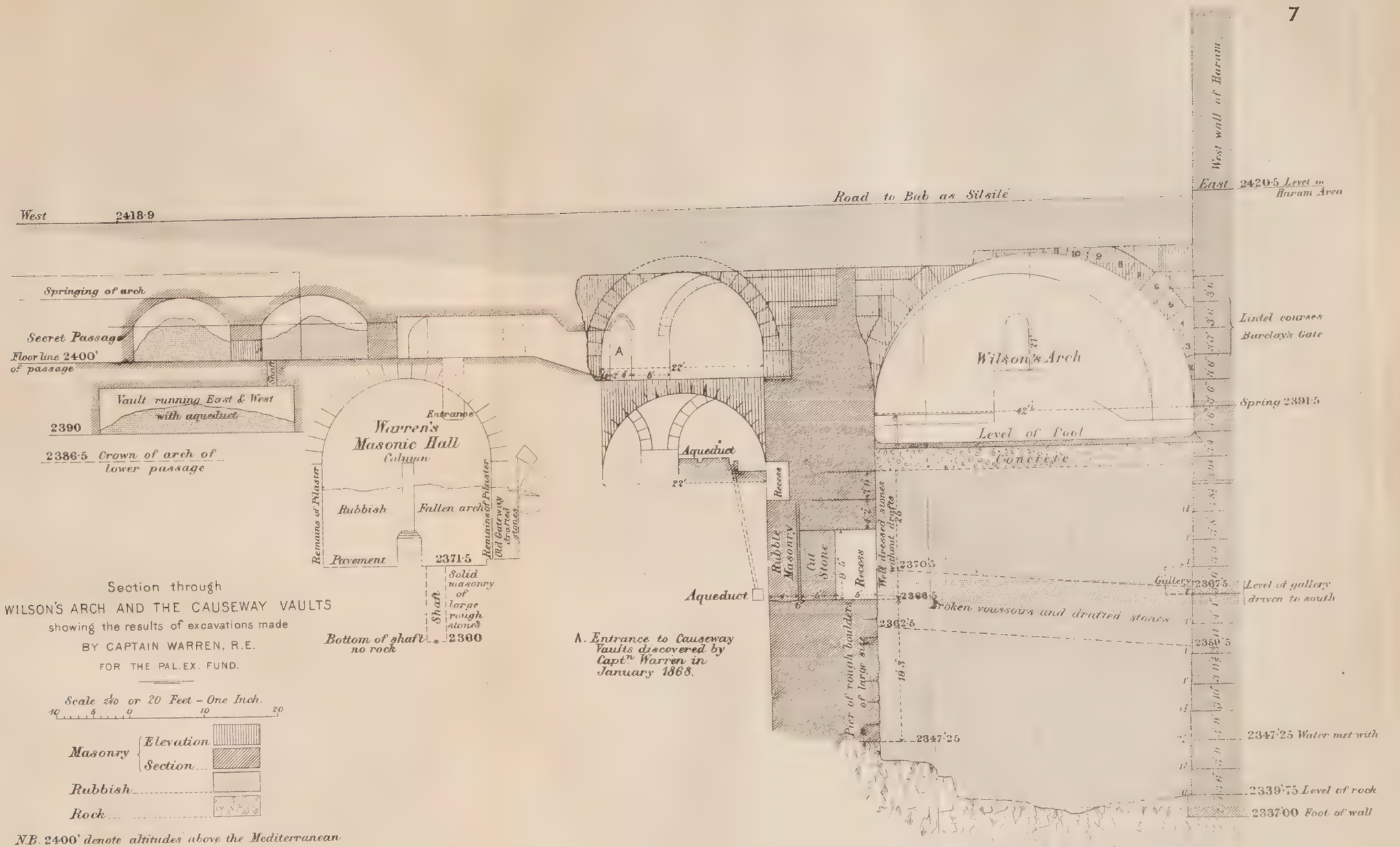
Valley Bed The rock under the western pier is 7 feet 6 inches higher than under the Haram Wall, and the lowest point of the valley appears to be about 6 feet west of the latter. During the excavations the presence of water at the bottom of the shafts caused considerable inconvenience, and periodical obser-

* The pier may perhaps be merely the end of the masonry of the old first wall.

vations, extending over two years, showed that there was always a gentle flow of water southwards down the valley, sometimes rising "3 feet or 4 feet above the rock" and then again subsiding. The water has the peculiar sewage flavour of Siloam, and the soil for 8 feet or 10 feet above the rock "is full of limestone crystals."

Causeway Vaults. The vaults alluded to above (p. 23) as lying to the west of those which lead to Wilson's Arch form part of the substructure of the Mahkama; they are arranged in two rows of three each, and their sides are nearly parallel to the Haram Wall; the arches are pointed, and on some of the stones in the wall modern Hebrew characters have been scratched. In January, 1868, Captain Warren broke through a closed opening in the second chamber of the northern row and made his important discovery of the Causeway Vaults, with semicircular and segmental arches, which form a continuation of Wilson's Arch.

The complicated nature of these vaults renders any accurate description of them somewhat difficult. There would appear to be two viaducts, making up a total width of 44 feet 6 inches, rather more than that of Wilson's Arch, 43 feet, but the continuity of the southern viaduct is almost immediately broken by a remarkable chamber, called by Captain Warren the "Masonic Hall," and west of this it is replaced by a long vaulted passage, the so-called "Secret Passage," and a series of small vaults with thick piers. The first chamber of the *northern viaduct* measures 21 feet from north to south, and 13 feet from east to west; the covering arch is semicircular, but it is not certain whether it springs from the 4-foot or 10-foot wall of the pier of Wilson's Arch. The next two chambers have been filled up with small passages having pointed arches, which were apparently connected with some system of water-supply, as draw-well openings were noticed overhead, and the buckets used have left marks on the sides. Traces of the original arches can, however, be seen above the later work. Beneath these three chambers are others of a similar character at a lower level, and in the first are two aqueducts which lead down through the floor to an aqueduct running north and south. The remaining chambers of the northern viaduct, five in number, measure each about 18 feet from north to south, and 14 feet from east to west, and they have piers of an average thickness of 7 feet 6 inches. The general direction of this viaduct is considerably removed from that of a line perpendicular to the Haram Wall, and bears away to the south. A somewhat similar series of vaults is said to lie to the north, but no examination of them has yet been made. The first chamber of the southern viaduct measures 23 feet 6 inches from north to south, and 22 feet from east to west, and immediately south of it is a continuation of the trimmer arch, observed above the pool Al-Burak, which covers the void between the north wall of the Mahkama and the Causeway. Beneath the chamber is another of similar character, in which is the recess mentioned as being in the west face of the pier of Wilson's Arch. Separated from this lower chamber by a pier 12 feet


West 2418·9
Road to Bab as Silsile
East 2420·5 Level in Haram Area
West wall of Haram
Springing of arch
Secret Passage
Floor line 2400' of passage
Shaft
Vault running East & West with aqueduct
2390
2386·5 Crown of arch of lower passage
Entrance
Warren's Masonic Hall
Column
Rubbish
Fallen arch
Remains of Pilaster
Remains of Pilaster
Old Gateway footed stones
Pavement
2371·5
Shaft
Solid masonry of large rough stones
Bottom of shaft no rock
2360
A
22'
Aqueduct
Recess
Rubble Masonry
Cut Stone
Recess
Well dressed stones without dressing
Aqueduct
Wilson's Arch
Lintel courses Barclay's Gate
Spring 2391·5
Level of Pool
Concrete
2370·5
Gallery 2367·5
Level of gallery driven to south
2366·5
Broken voussoirs and drafted stones
2362·5
2350·5
Pier of rough boulders of large size
2347·25
2347·25 Water met with
2339·75 Level of rock
2337·00 Foot of wall
Section through
WILSON'S ARCH AND THE CAUSEWAY VAULTS
showing the results of excavations made
BY CAPTAIN WARREN, R.E.
FOR THE PAL. EX. FUND.
Scale 40 or 20 Feet – One Inch.
40 0 10 20
Masonry Elevation
Section
Rubbish
Rock
N.B. 2400' denote altitudes above the Mediterranean
A. Entrance to Causeway Vaults discovered by Captn Warren in January 1868.
Stanford's Geogl Estabt.

thick, though not quite on the same level, is the "Masonic Hall," which is entered by a sloping passage from the third vault of the northern viaduct. The "Hall," at one time used as a cistern, was originally 23 feet from east to west, and 20 feet 4 inches from north to south, but 10 feet 4 inches has been added on the south, making a total length of 30 feet 8 inches. The south wall of the original structure is broken away, but the remaining walls are 4 feet thick, and apparently built without mortar. On the exterior of the building the stones have marginal drafts, and are similar to those in the Wailing Place, whilst in the interior the faces of the stones are plain dressed, and at each corner there are pilasters projecting about 2 inches. These pilasters have capitals, which are said to be very similar to one found at Arak el Emir by Mons. de Saulcy, and a sketch of one of them is given in the "Recovery of Jerusalem," p. 89. At the south-east angle is a double entrance, with lintels, on which, as well as upon the jambs, there are traces of ornament. The covering arch of the chamber is semicircular, but not so old as the walls. The later portion, on the south, 10 feet 4 inches, corresponds to the space occupied by the trimmer arch on the east and the secret passage on the west; it is covered by a later arch than that to the north, "and to conceal this a column was raised in the centre under the break, and two pointed arches thrown over from the column to the sides, the span of each being about 10 feet." The column has since partly fallen, and much of the ribbed arch. Beyond the east wall a lot of rough masonry was found, and a shaft sunk in the centre of the chamber, after reaching the original paved floor, 15 feet 6 inches below the present level of the rubbish, passed through solid masonry of large rough stones to a further depth of 11 feet 6 inches without reaching the rock.

West of the "Masonic Hall" the southern viaduct is continued by a row of small chambers 14 feet 6 inches from north to south, and 11 feet from east to west, with piers about 12 feet thick, the arches opening on one side into the northern viaduct and on the other into the "Secret Passage." Beneath the first two chambers there is a vault at a lower level, lying east and west, in which there is a shaft running down 14 feet, and then an aqueduct leading towards the south-west angle of the pier of Wilson's Arch. The "Secret Passage" which makes up, with the small chambers, the width of the southern viaduct is 12 feet wide, and covered with a semicircular arch, the crown of which is about 7 feet below the level of the street above. At a distance of 205 feet* from the Haram Wall there is a thin wall, and beyond it a drop of 6 feet into a continuation of the passage, which is terminated by a wall on the west. An opening, with a door to the south, leads into a vault now used as a

* Captain Warren gives this distance as 220 feet in the "Recovery of Jerusalem," and as 230 feet in Letter XXIV. to the Palestine Exploration Fund; it should probably have been to the wall west of the drop, which is 221 feet from the Haram Wall. The distances given above are partly from measurement on the plan and partly from data supplied by Captain Warren.

donkey stable. A portion of the same passage was found in a cistern about 235 feet from the Haram Wall, its western end being 253 feet from the same point. From the cistern there is an opening to a vault south of the causeway and a little east of the prolongation of the street el Wad. The floor of this vault is on a level with the springing of the arch of the "Secret Passage," and from it a narrow shaft, 25 feet 6 inches deep, runs down to the crown of an arch covering a chamber lying east and west and 4 feet to the south of the "Secret Passage;" the crown of the arch is 36 feet 6 inches below the street level. The chamber is 14 feet 6 inches long, 8 feet broad at the western end, and 10 feet 6 inches at the eastern end, covered with plaster and roofed with a "straight-sided pointed arch." An excavation on the west showed no trace of a continuation, but on the east another chamber was found, 18 feet long, lying east and west, and being, like the first, wider at the east end than at the west; here there is no plaster, and the covering arch of 19 stones of nearly equal size is almost semicircular. The volute of an Ionic capital was found in this chamber. At the east end there is a 5-foot doorway with lintel and semicircular relieving arch, and beyond this a passage 2 feet 6 inches wide, "covered with blocks of stone laid horizontally," which is closed by *dêbris* at a distance of 10 feet 6 inches.*

Peculiarities in Construction of Causeway.

Owing to one of those unfortunate *contretemps* which so frequently interfere with the best arrangements of an explorer in the East, the plans and sections of the causeway vaults are not in all respects as satisfactory as they might be, and there is still some uncertainty as to the position the vaults occupy with reference to the street above, and as regards their relative position to each other.† On the plan (Plate 8), the street leading to the Haram, laid down with as much accuracy as the data will admit of, appears to lie irregularly over the "Secret Passage" and trimmer arch, though it would seem more natural to suppose that the two last lay throughout their course immediately beneath the street. At one point in the direction of the "Secret Passage" there is a decided elbow, and the passage itself, if prolonged, would run partly to the north of the trimmer arch in the "Masonic Hall." Some of the peculiarities which may be noticed are: the thickening of the pier of Wilson's Arch by the 4-foot wall; the uncertainty as to the nature of the original pier, and as to whether the splay northwards is in the 4-foot or the 10-foot wall; the position which the "Masonic Hall" occupies with reference to the general line of the viaduct, and the difference of character between the vaults east and those west of that chamber. It it also worthy of remark that the low level of the Hall would allow the "Secret Passage"

* For details of doorway, &c., see "Recovery of Jerusalem," p. 93.

† The measurements were made under circumstances of considerable difficulty, and before they could be fully tested the entrance to the vaults was walled up by order of the Pacha.

to pass over it, and that the springing of the covering arch of the latter is at a higher level than that of the trimmer arch to the east.

The numerous reconstructions, extending over several hundred years, and the doubt as to the accuracy of the plans, render any conjecture as to the relative dates of the several portions of the causeway, and the purposes they were intended to serve, extremely hazardous; excavations alone can solve the many questions connected with the history of the vaults, and it is much to be regretted that circumstances did not allow of their being made in a place of so much interest and importance. Captain Warren fully recognised the necessity of excavating in the vaults of the causeway, and had commenced opening shafts, but on his return from Jericho, where he had been excavating in the mounds, he found the entrance blocked up with solid masonry, and orders from the Pacha that it was not to be reopened; the shafts within the vaults have never been closed, but it may be many years before any one is able to resume the excavations.

Captain Warren's Views.

Captain Warren's opinion that Wilson's Arch is not older than the fifth or sixth century has already been alluded to, and it may be convenient to state here his views on the age of the causeway vaults, which he believes to be the result of at least four reconstructions. The vaults are said to be "apparently of similar age and construction"* to Wilson's Arch, but Captain Warren considers the southern viaduct older than the northern, and that "if so, the original viaduct arch over the Pool al Burak was only 23 feet 6 inches wide; this must at some time or other have been broken down; then a restoration took place, the causeway was widened by a fresh set of arches to the north, and the void space over the Pool al Burak was spanned by the present Wilson's Arch, and made the width of the double causeway. It does not appear probable that these arches were ever exposed to view (except Wilson's Arch); they appear to have been used as secret chambers for stores and for water."† "The Masonic Hall has every appearance of being the oldest piece of masonry visible in Jerusalem with the exception of the Sanctuary walls, and perhaps as old as they."‡ The "Secret Passage" does not appear to be "of so ancient a date as the time of David or even of Herod."§ The vaults at a lower level are supposed to have been "the vestibule to a postern leading from the Upper City into the Tyropœon Valley."‖

* Letter XXIII., January 22nd, 1868, *Quarterly Statement*, Palestine Exploration Fund.

† "Recovery of Jerusalem," p. 85 *et seq.*

‡ P. 89.

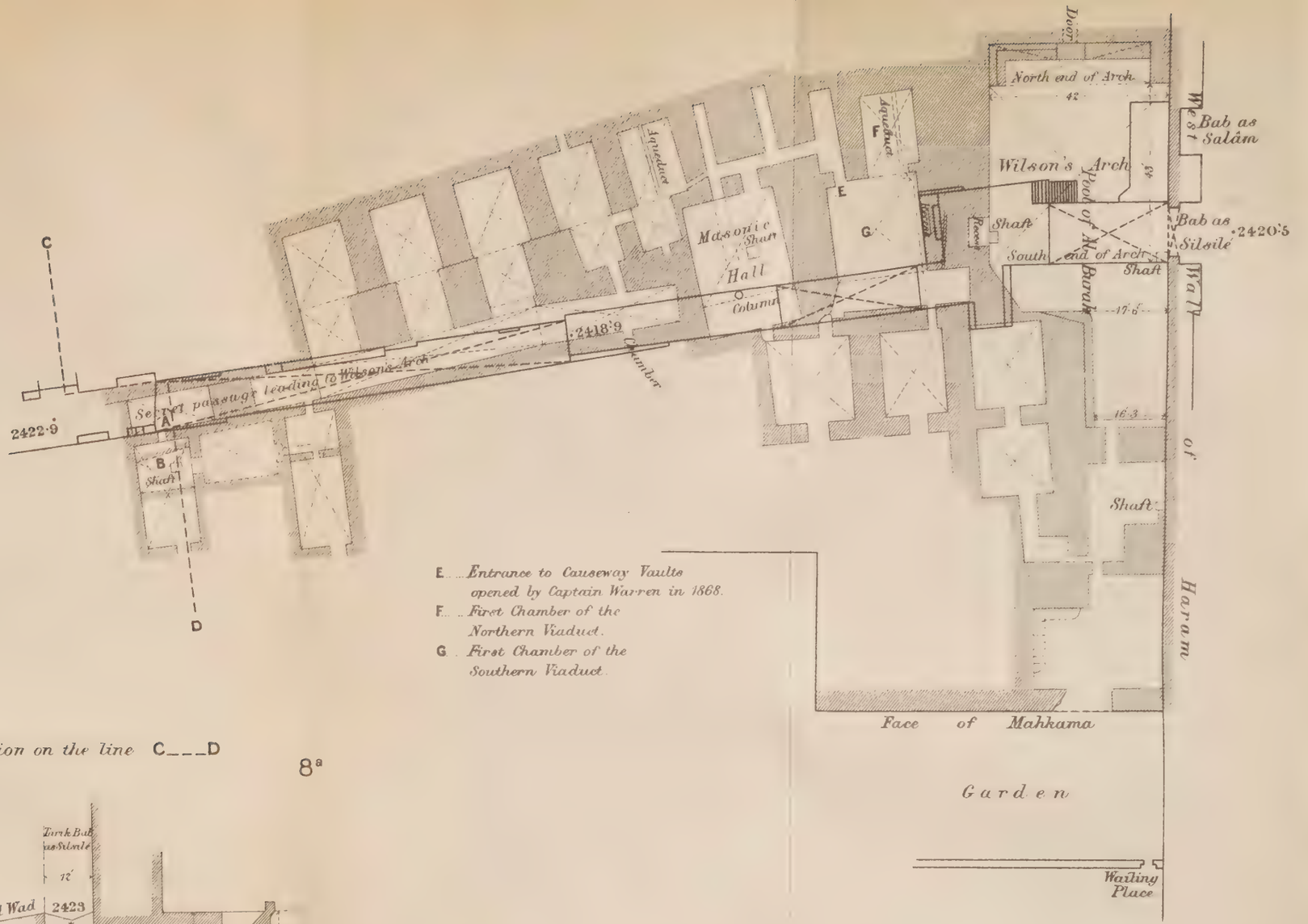
§ "Recovery of Jerusalem," p. 91. This passage is alluded to by Mejr ed Din as existing in his time, and as running from the Citadel to the Gate of the Chain; the western entrance is probably that noticed in the ditch of the citadel.

‖ "Recovery of Jerusalem," p. 94.

Possible nature of Causeway.

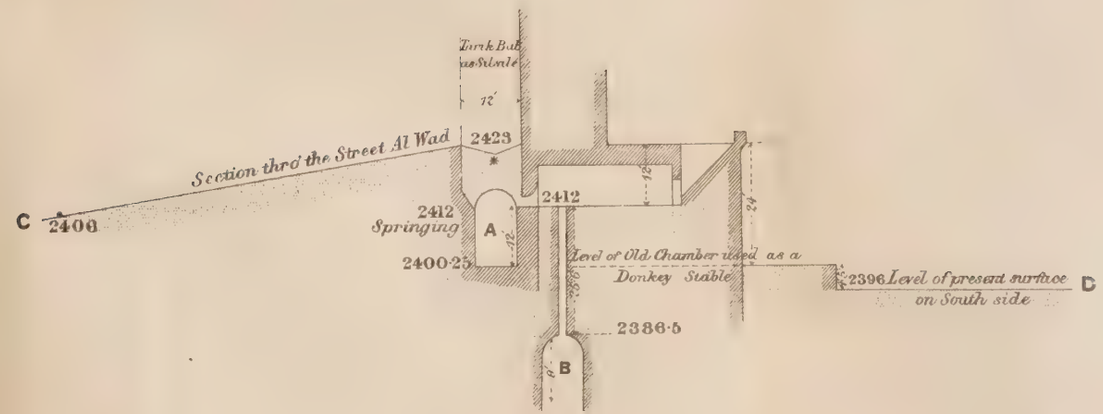
If the natural features of the ground beneath the causeway were known it would perhaps be possible to form some opinion on the nature of the great viaduct, but at present the point at which the valleys running down from the Jaffa and Damascus Gates join each other is unknown, and it is uncertain how far the structure of the causeway may have been influenced by this feature. The following view is put forward as a suggestion. "Josephus states (B. J. v. 4. 2) that the first or old wall "began on the north at the tower called Hippicus, and extended as far as the Xystus, a place so called, and then joining to the council house ended at the west cloister of the Temple," and it is almost certain that this wall crossed the deep ravine running down from the Damascus Gate at Wilson's Arch. The old wall may have been either a massive wall forming in itself the defence of the city, as Captain Warren's excavation beneath the floor of the "Masonic Hall" would seem to indicate, or a great embankment with a wall on the top; at any rate, this first construction would give the line for all succeeding ones. When the second wall was built the causeway may have been pierced for convenience of communication towards Siloam, and the narrow opening spanned by a wooden bridge, such as that which was broken down by Aristobulus during Pompey's siege; during Herod's great reconstruction of the Temple the opening may have been widened, an arch 42 feet span thrown across it, and the causeway completed to form a grand approach from his palace to the Temple; the rough boulders of which the lower portion of the pier of Wilson's Arch is built might in this case be the end of the old wall which it was not thought necessary to face with dressed stone. Herod's Arch may have been retained by the Romans after the siege, as a means of communication between the Citadel and Temple area, and when it fell, or was broken down* during some later troubles, it may have been rebuilt in its present form by Constantine or Justinian. The object and age of the "Masonic Hall" are most puzzling questions; the low level at which the chamber lies shows that it must have been built long before any such scheme as that of which Wilson's Arch forms part was thought of, and its position seems to indicate that it was in some way connected with the Temple, possibly a guardhouse erected during the stormy period of the Maccabees. Captain Warren's theory that the causeway was originally only 23 feet 6 inches wide appears to be based on the belief that the fallen voussoirs do not extend as far as the north end of Wilson's Arch; these voussoirs were only seen under the south end of the arch, and their existence or nonexistence to the north can only be ascertained by excavation. The narrow width of the southern viaduct west of the "Masonic Hall" would seem to indicate that there never was a causeway 23 feet 6 inches wide, and the position of the hall itself supports this view. A more natural suggestion would appear to be

* Unfortunately we have no means of comparing the form and size of the fallen voussoirs beneath Wilson's Arch, and those of Robinson's Arch, which are undoubtedly Herodian.



Section on the line C___D

8ª



Position of rock estimated at 2360

PLAN OF
WILSON'S ARCH AND THE CAUSEWAY VAULTS
showing the results of excavations made
BY CAPTAIN WARREN R.E.
FOR THE PAL. EX. FUND.

* Probable position of Aqueduct from Solomon's Pools.
A Secret passage running to Wilson's Arch.
B ... Passage with gateway.

Masonry.
Rubbish.

Scale 500 or 41·66 Feet - One Inch.

50 40 30 20 10 5 0 60 100

Stanford's Geog¹ Estab¹ London

that at the time of the Maccabees the top of the wall, no longer required as a principal line of defence, was on a level with the floor of the "Masonic Hall," and that there was then a wooden bridge of narrow span over the ravine, and an ascent to gain the level of the Temple area; and that Herod afterwards raised the causeway to the Temple level by vaults which have since undergone several modifications. The existence of the twin viaducts may be explained by the necessity of working the "Masonic Hall" into the general plan, and giving a southerly direction to the causeway. The age of the "Secret Passage" is doubtful; it was apparently constructed to allow soldiers to pass freely and unnoticed from the Citadel to the Temple, and there seems no reason why it should not be ascribed to Herod.* The eastern end of the passage may still exist within the Haram enclosure. The chambers discovered by Captain Warren at a lower level may have formed portions of a similar passage of older date running along the south side of the first wall, or, as he suggests, have led to a postern opening on to the rocky slope of the valley.†

General remarks on the Wall from the S. W. Angle to Wilson's Arch.

The excavations seem to show that at the south-west angle there are six courses of large stones, with marginal drafts and rough picked faces, which extend northwards to the vicinity of Barclay's Gate, where they are replaced by stones with similar marginal drafts, but having their faces finely dressed. Above these courses up to the present level of the ground, and in some places to three or four courses above it, the masonry is throughout of the same character, large stones with marginal drafts and finely-dressed faces. The courses run through without a break from Wilson's Arch to the south-west angle, and no difference has yet been noticed in the dressing or marginal drafts of the stones. The upper portion of the wall is of various dates and of minor interest. It has already been explained that if the approach to Barclay's Gate was by a solid ramp, such ramp would be a fitting termination to the courses of stone with rough picked faces.

The position of the bed of the ravine is not very clear. It is fairly well defined under Wilson's Arch, whence the rock falls 19 feet 9 inches to Barclay's Gate, but from this point to Robinson's Arch there is a rise of 5 feet, and at the south-west angle the bed of the ravine is 90 feet to the east. There seems no doubt that the wall stands partly on the right

* Simon in attempting to escape, B. J. vii. 2. 1, may have passed from the Upper City to the Temple area by this passage, or the aqueduct which crosses Wilson's Arch.

† The following are the principal levels :—

General level of Haram area	2,420·0 feet.
Floor of Secret Passage	2,400·0 ,,
Spring of Wilson's Arch	2,391·5 ,,
Floor of Masonic Hall	2,371·5 ,,
Top of pier of rough boulders	2,366·5 ,,
Level of rock beneath Haram Wall	2,339·75 ,,

and partly on the left bank of the ravine, and the most probable supposition seems to be that it crosses the bed somewhere near Barclay's Gate.*

Báb as Silsilé. Báb as Salâm.

The principal approach to the Haram area is by a street which passes over Wilson's Arch and enters the enclosure, on a level, through a handsome double gate. The southern gate is called the Báb as Silsilé (Gate of the Chain), the northern Báb as Salâm (Gate of Peace), and at the bottom of the left jamb of the latter there is a massive stone with marginal draft, the north end of which corresponds with the end of the great causeway arch beneath.†

Warren's Gate.

From the Báb as Salâm to the Báb al Mathara (Gate of the Latrines) the Haram Wall is nowhere visible above ground, but about 26 feet south of the latter gate there is a remarkable cistern,‡ No. 30, which pierces the wall, and is apparently an ancient entrance to the enclosure. The passage is at right angles to the Haram Wall, and is 18 feet wide. It runs in for 84 feet from the face of the wall, is covered by a semicircular arch of well-dressed stones of some size set without mortar, and its floor is about 30 feet below the level of the area. The sides and bottom of the cistern are thickly coated with cement, and cannot be examined. The western end is closed by a modern wall of small coarse rubble, and there is here a flight of steps leading up to a small door. The passage is in some respects similar to that running in from Barclay's Gate, but it seems to be of more modern date, and it has no lintel, so that its external appearance would be that of an arched opening in the Haram Wall. Captain Warren was able to examine a cistern outside the wall in direct prolongation of No. 30, but not so wide.§ The cistern is 34 feet 6 inches

* The following are the principal levels :—

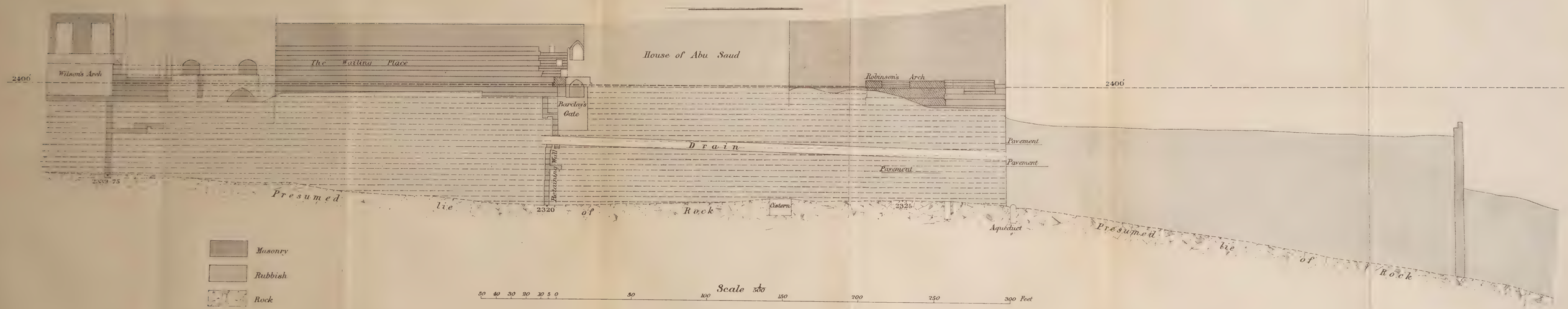
Level of Haram area	2,420·0 feet.
Spring of Wilson's Arch	2,391·5 ,,
Sill of Barclay's Gate...	2,369·7 ,,
Spring of Robinson's Arch	2,387·5 ,,
Rock under Wilson's Arch	2,339·75 ,,
Rock under Barclay's Gate	2,320·0 ,,
Rock under Robinson's Arch	2,325·0 ,,
Bed of Ravine 90 feet east of S.W. angle	2,289·6 ,,

† Mejr ed Din states that the gate was built in A.H. 877 (1492-3 A.D.), and he calls the Báb as Salâm the Gate of Tranquillity (Sekiné).

‡ This passage was first discovered by myself in 1866, and I propose distinguishing it by the name of "Warren's Gate," as a small tribute to Captain Warren, R.E., whose excavations have thrown so much light on the topographical features of ancient Jerusalem.

§ The Haram Wall is exposed in a recess to the south. This cistern may be a portion of the pool, which is known to have existed at this place up to a comparatively recent period. At 22 feet from the bottom of the cistern the springing of a modern arch can be seen.

Elevation of the West Wall of the Haram Area from Wilson's Arch to the S.W. Angle showing the result of excavations made by Cap.t Warren R. E. for the Palestine Exploration Fund.



Stanford's Geog.l Estab.t London.

deep, but as the level of the ground is here 6 feet above that of the area only 28 feet of the Haram Wall is exposed. The stones are partially rendered with cement, but the character of the masonry, as far as it could be ascertained, was similar to that of the Wailing Place.*

There is no way of ascertaining the height of the Haram Wall at this point, except by excavation. In the conduit of the Hammâm ash Shafâ Well, some 135 feet to the west, the rock is about 80 feet 6 inches below the level of the Haram area, but this seems lower than the level of the bed of the ravine, which is probably much nearer to the wall.† It will be noticed that there is no visible means of reaching the level of the area from the cistern. The most probable arrangement would be one somewhat similar to that at Barclay's Gate, for in this case the eastern end of the passage must almost abut on the rock. The level of the floor of the passage is unknown, and there is nothing to throw any light on the character of the original approach. Captain Warren identifies‡ this gate with that mentioned by Josephus, from which the road descended into the valley by a great number of steps, but it is quite possible that the approach may have been by a roadway supported by arches.

Báb al Mathara.

The Báb al Mathara is comparatively modern, the road leading up to it ascends slightly, and the area is reached by three steps. This gate is called by Mejr ed Din the "Gate of the Bath," from its leading to the bath of the Haram.

Báb al Mathara to Báb an Názir.

A short distance north of the Báb al Mathara, at the east end of the old Cotton Bazaar, is the Báb al Kattanín (Gate of the Cotton Merchants), a handsome Saracenic portal, said to have been repaired in 1336-7 A.D. A flight of steps leads up to the Haram area, which is 12 feet above the roadway of the Bazaar. The next gate northwards is the Báb al Hadíd (Iron Gate), and beyond this is the Báb an Názir or Nadhir (Gate of the Inspector), also known as the Báb Ali ad din al Bosri, an old gate

* The wall, free of plaster, could only be seen to a depth of 6 feet below the level of the Haram area.

† The lie of the rock here is very puzzling; at the ash Shafâ Well it is about 2,339·5 feet, the bottom of the conduit being about 2,334 feet, and at Wilson's Arch it is 2,337 feet (lowest point); this gives a fall of only 2 feet 6 inches from the well to the arch, and the ravîne would hardly take such a sharp bend as this indicates. There seems every reason to believe that the ash Shafâ conduit is a continuation of that under Robinson's Arch, and the bend which it makes to the west may possibly mark the junction of the valley from the Jaffa Gate with the central ravine. The bed of this latter ravine must to all appearance lie to the east of the well, and in this case the ash Shafâ conduit possibly forms portion of a drift, or *Kariz*, driven into the rock at a very early date, and broken through at a later period. It is just the position in which a drift would be made to collect the water that finds its way down through the limestone beds of the hill upon which the Church of the Holy Sepulchre and the Russian Convent have been built.

‡ "Underground Jerusalem," p. 68.

repaired about 1203-4 A.D.* Between the Báb al Mathara and the Báb an Názir the rubbish rises nearly to the level of the Haram area, and entirely conceals the face of the wall, except at one point north of the Báb al Hadíd, where there are a few courses of stones with plain chiselled faces;† the ground is occupied by Moslem houses, built so closely together as to forbid excavation or exploration, and there are several tombs of Turkish effendis held in great reverence by the present generation. The depth of rubbish at the Báb al Kattanín is probably about 70 feet, and in sinking for the foundations of a house near the Báb al Hadíd no rock or solid bottom was found at about 35 feet. The streets leading to the Báb al Hadíd and Báb an Názir rise gently to the level of the Haram area.

Báb an Názir to Báb al Ghawanimé.

Between the Báb an Nazír and Báb as Sarai (Gate of the Seraglio) a modern doorway, 168 feet to the north, which, in 1864, led from the Pacha's residence to the Haram, the wall is nowhere visible, but beneath the latter gate a portion of the masonry is exposed to view in the aqueduct which runs southwards from the souterrain beneath the Convent of the Sisters of Zion. The wall is 8 feet thick, and the masonry is similar in character to that at the Wailing Place. One course is exposed to its full height, 4 feet 6½ inches, whilst two others are partially uncovered; the faces of the stones are well finished, and each course is set back from 3 inches to 4 inches; the marginal drafts at top and bottom are 7 inches wide, and at the sides 3 inches to 4 inches;‡ they are sunk half an inch. From the south-west angle to the Báb an Nazír the Haram Wall runs in an unbroken straight line, but north of the latter point there must be an offset, as the face of the masonry described above, though parallel to the line of the wall, projects 8 feet or 9 feet beyond it; the exact position of the offset is not known, it may be about 88 feet north of the Báb an Nazír. The wall can be of no great height, as the rock rises to the surface in the adjoining portion of the Haram. Twenty-six feet north of the Báb as Sarai a fragment of the old wall of the Haram,§ first noticed by Lieutenant Conder, R.E., is exposed in a

* According to Mejr ed Din this is the gate to which Gabriel tied Burak, and it was formerly called the Gate of Mahomet.

† One or two of the stones have the marginal draft, but the style of the work is that of the middle portion of the Wailing Place Wall, and it is apparently of the same date. The large stones are backed with coarse rubble. A small cistern examined here proved to be built in the rubbish, and gave no results.

‡ Lieutenant Conder gives the height of the course as 4 feet 6 inches and 4 feet 7 inches; the upper and lower drafts as 6 inches, and the set back as "3 inches or 4 inches," and as "about 6 inches" (*Quarterly Statement*, Palestine Exploration Fund, 1873, p. 92, and 1877, p. 135). I have followed Dr. Chaplin's measurements.

§ This is the only place in which masonry apparently belonging to the original wall is visible above the present level of the Haram area. A sketch of it is given, *Quarterly Statement*, Palestine Exploration Fund, 1877, p. 136.

small chamber, which can be reached from the aqueduct by means of a short branch passage. The masonry below the level of the Haram area is similar to that beneath the Báb as Sarai, and, being in direct prolongation of it, is evidently a continuation of the same wall. The chief interest, however, lies in the fact that the wall above the level of the enclosure is apparently *in situ*, and has projecting buttresses similar to those in the Haram Wall at Hebron. The first or northern buttress is 1 foot 6 inches wide, and is partly of rock, partly of masonry. The second is 4 feet 9 inches wide, and at a distance of 8 feet 9 inches from the first, the intermediate space being occupied by a window, 4 feet wide, which looks into the Haram area, and is apparently ancient. The buttresses are built flush with the lower part of the wall, whilst the spaces between them are recessed 1 foot 6 inches by means of a plinth course. The stones have 3½ inches marginal drafts, and their faces are dressed smooth, but only two courses are visible above the plinth.* The north wall of the small chamber is partly formed by a rock escarpment, which rises to the level 2,434 feet, or 3 feet above the adjacent surface of the Haram, and marks the termination of the masonry of the west wall.

N. W. Angle. From this chamber to the north-west angle, a distance of about 110 feet, and from the angle eastward along the north side of the Haram for a distance of about 350 feet, the rock rises above the level of the enclosure, or rather the rock within the Haram has been cut away so as to leave escarpments from 3 feet to 23 feet high, facing inwards, on the west and north. Above the scarp on the west are modern houses, and beneath them is the Báb al Ghawânimé, or Ghawâriné, which leads to the Daraj as Sarai, and also to the Tarík as Sarai al Kadím (*Via Dolorosa*). The lower part of the gateway is cut out of the rock, and a flight of steps leads up to it from the Haram.†

Báb al Ghawânimé.

At the north-west angle there is a minaret, built about 1207-8 A.D., in which has been found a mutilated capital, representing the "Presentation of Christ," built into the wall a little above the level of the platform used by the *muezzin*. This fragment was possibly taken from the Chapel

* The pilasters at Hebron are 3 feet 9 inches wide, project 11 inches, and are 6 feet 9 inches apart. Mr. Fergusson, in his restoration of Herod's Temple (frontispiece to "The Holy Sepulchre and the Temple at Jerusalem"), represents the outer walls of the cloisters as built with pilasters; so also M. De Vogüé in "Le Temple de Jérusalem," pl. xvi., but he places the pilasters at much wider intervals. Lieutenant Conder gives the level of the window-sill of the chamber as 2,429 feet, that is 2 feet below the Haram level at this point, or 10 feet above its level at the south-west angle; from this it seems probable that south of the offset in the wall near the Báb an Názir, the pilasters, if there were any, stood at a lower level.

† This gate is also called Báb al Dawîdâr, "Gate of the Secretary.' The name Báb al Ghawânimé possibly has reference to the Beni Ghanem; Báb al Ghawâriné to the inhabitants of the Ghôr, Jordan Valley. According to Mejr ed Din it was formerly called the "Gate of Abraham."

of the Presentation, which during the Latin kingdom was situated in the Dome of the Rock.*

The escarpment, which forms part of the northern boundary of the Haram, rises to the level 2,462 feet and then falls eastward until, at a point 350 feet from the angle, it terminates in a scarp 14 feet high, which faces east. The level of the top of this scarp is 2,433 feet, that of the Haram being 2,419 feet; its continuation towards the north cannot be traced on account of the buildings above. About 110 feet from the north-west angle an irregular opening or ditch, about 9 feet wide, has been cut down through the rock to the level of the Haram;† it is now closed with rough masonry. Farther to the east there is a shallower cutting filled up with a better class of masonry, and there are several holes in the face of the rock, as if to receive beams or the haunches of arches; at the foot of the scarp are two rock-hewn cisterns. The strata exposed in section by the cutting at the north-west angle are the upper thin beds of *missæ*, and they have a dip of 10 degrees towards the east. Above the escarpment are the Infantry Barracks, which occupy a commanding site, once separated from the higher ground on the north by a rock-hewn ditch, visible in the souterrains beneath the Convent of the Sisters of Zion, and also in a chamber entered from the Tarik Báb Sittí Maryam, where the scarp rises to a height of 8 feet above the street.

Souterrains beneath the Convent of the Sisters of Zion.

The souterrains, which lie a little to the north of the north-west angle, and are inclined at an angle of 21 degrees to the west wall of the Haram, were discovered during excavations made for the foundations of the Convent of the Sisters of Zion; they consist of two parallel tunnels or vaulted passages, separated from each other by a wall 5 feet 9 inches thick, and abutting at either end on a rock escarpment;‡ they are reached from a narrow side street north of the Via Dolorosa by passing through the kitchen of the convent and then descending a flight of steps. Souterrain No. I. is 165 feet 2 inches long and 20 feet 1 inch wide; at the north end the rock escarpment is 39 feet high, and its summit level is 2,458 feet, whilst at the south end it is 57 feet high, and attains a level of 2,456 feet;§ the floor has thus a fall of about 20 feet from north to south. The sides of the souterrain are not quite

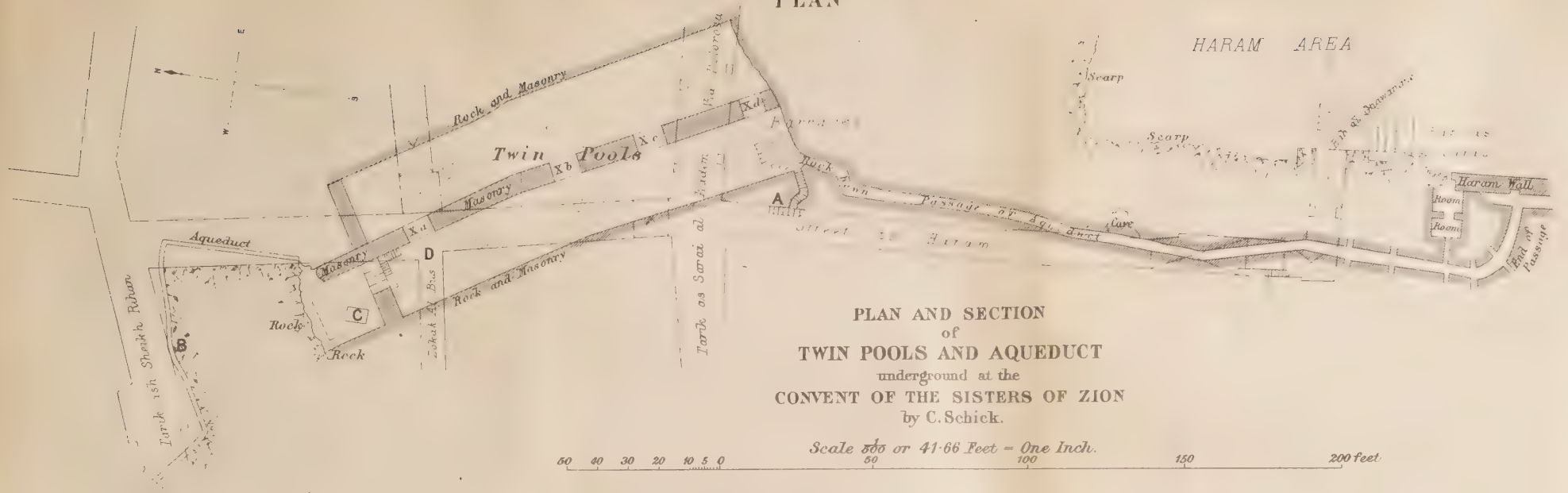
* Ganneau, "Revue Archéologique," Mai, 1877.

† It may be well to notice that this cutting is exactly the same distance from the north-west angle as the scarp in the little chamber outside the west wall.

‡ It has been suggested that these souterrains are only two of a series, but no others have yet been found.

§ The description of the souterrains and the ground at the north-west angle, and also the plan and section, Pl. 9, have been compiled from my own notes on Souterrain I.; Captain Warren's notes and plan of Souterrain II. and the Aqueduct; Lieutenant Conder's notes on a visit to the Souterrains and Aqueduct, and plans, sections, and notes kindly sent to me by Mr. Schick. At the time of my visit to Souterrain I. in 1865 there was much rubbish and sewage,

PLAN

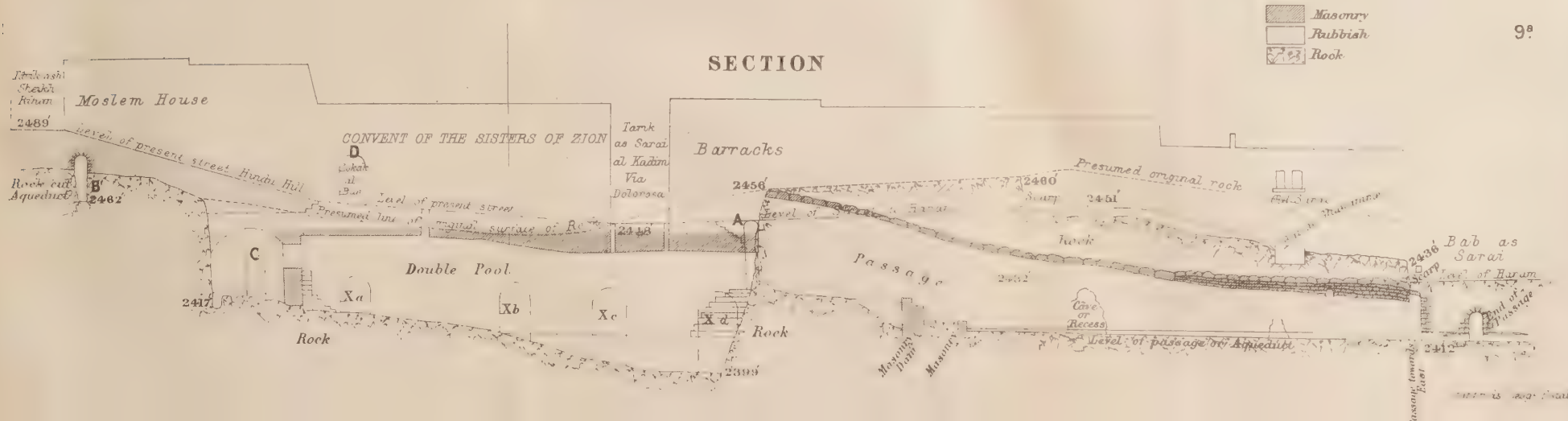


PLAN AND SECTION
of
TWIN POOLS AND AQUEDUCT
underground at the
CONVENT OF THE SISTERS OF ZION
by C. Schick.

Scale 1/500 or 41·66 Feet = One Inch.

50 40 30 20 10 5 0 50 100 150 200 feet

SECTION



straight, and the work looks as if it had been built from both ends and had not met quite fair; the west side is partly formed by a rock escarpment from 13 feet to 24 feet high, the east side is pierced by four openings communicating with Souterrain II. The souterrain is divided into two unequal portions by a 5-foot wall, through which there is a low opening of modern construction; the north chamber communicates with the Convent by a flight of steps, and contains the so-called spring;* the south chamber is covered by a well-built semicircular arch of plain chiselled stones, except in one place where the arch has been broken and repaired with a pointed arch.† At the north end of this latter chamber an old flight of steps leads up to a well-built doorway in the cross wall, which appears to have been part of the original structure, and beneath this is an arched opening apparently for the passage of water; at the south end a flight of steps, partly cut out of the rock, leads up to the street above, through a doorway and passage in the west wall, which are of the same date as the covering arch of the souterrain. From the south-west corner of the chamber a rock-hewn passage or aqueduct, about 4 feet wide, runs southward to the Haram Wall beneath the Bâb as Sarai;‡ at about 10 feet from the entrance it bends to the west for 6 feet, and then resumes its southerly direction for about 40 feet to a dam 9 feet high, which is provided with a hole for regulating the flow of the water; about 150 feet beyond the dam a small passage§ leads due east, and gives access to the chamber in which Lieutenant Conder found

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and I was unable to examine the place thoroughly; the same causes prevented a complete examination by Captain Warren, who was, however, able to follow the aqueduct for a considerable distance and make a plan of Souterrain II. The souterrains and aqueduct were afterwards cleared out, and in this state were visited by Lieutenant Conder and Mr. Schick; there are unfortunately many discrepancies between Lieutenant Conder's notes and Mr. Schick's plans which I have not been able to reconcile; I have generally followed the latter as being more detailed, but there are several doubtful points, and the section on Pl. 9, as well as the rock levels given in the notes on the north-west angle, can only be considered as approximately accurate.

* The water is impregnated with sewage and unsuitable for drinking purposes.

† A great many holes have been broken through the crown of the covering arch, and, as the rubbish accumulated above, rough shafts were carried up from them; they are now all closed and appear to have been so for some time, but they show that there must once have been a good supply of water here. Above the covering arch there are a number of large flat slabs which are probably the paving stones of the old street.

‡ This aqueduct was first explored by Captain Warren, R.E., in 1867, who was stopped by a masonry wall; in 1870 the rubbish was cleared away and the remaining portion of the aqueduct examined by Dr. Chaplin and Mr. Schick ("Recovery of Jerusalem," p. 199-201).

§ *Quarterly Statement*, Palestine Exploration Fund, 1873, p. 91-93, and 1877 p. 135-137.

the masonry described on page 33; and a few feet farther the aqueduct itself turns sharp to the east and meets the masonry of the Haram Wall under the Bâb as Sarai (p. 35). The aqueduct, as far as the small passage, is entirely rock-hewn and covered with flat slabs laid across horizontally; it is at first about 40 feet high,* but beyond the dam it slopes down to 22 feet, and eventually to 8 feet; south of the passage the lower portion only is of rock, the upper is of masonry, and the slabs are replaced by an arch of small stones. The bottom of the aqueduct is plastered throughout, and there is a small water channel;† in the east side two rude recesses have been cut back into the rock above the level of the water, and there are also weepers to facilitate the collection of water. In the small passage running east the north wall is rock; the south wall, except 2 feet at the bottom, masonry; the chamber lies at a higher level, and is reached through a hole in its floor. Lieutenant Conder describes the passage as leading "due east beside the south face of the great corner scarp;"‡ the face of the scarp appears to be about 20 feet high, and to mark the southern termination of the elevated mass of rock at the north-west angle of the Haram, but unfortunately the plans which have been received do not show whether it extends beyond the aqueduct to the west. The original direction of the aqueduct beyond the small passage is not very apparent; the channel was evidently cut through when the rock was scarped at this place, and there are some reasons for supposing that its floor was once at a higher level. The present abrupt termination of the aqueduct at the Haram wall seems to show that it was again cut through when the wall was built, but whether it ran down the crest of the hill or kept along its side is uncertain.§

Souterrain II. is 127 feet long and 24 feet to 26 feet wide. At its south end it is terminated by a continuation of the rock escarpment seen in Souterrain I. The north end is blocked up with masonry of late date, but as a prolongation of the northern rock escarpment in I. is said to have been found, the souterrain may have extended up to it at one time. At the north end the vault is 20 feet wide, but after 45 feet the span of the covering arch is 24 feet, and the springing slopes to the south at 1 in 6, the crown remaining horizontal. This continues for 36½ feet, and is succeeded by another arch, the crown of which is 4 feet 6 inches

* Captain Warren gives the height as 30 feet, "Recovery," p. 199, and as 36 feet above the sewage, p. 201; Lieutenant Conder as 20 feet, *Quarterly Statement*, Palestine Exploration Fund, 1873, p. 92. I have followed Mr. Schick's section, which gives 40 feet.

† I have adopted 2,412 feet as the level of the floor of the aqueduct from Mr. Schick; Lieutenant Conder gives it as 2,409 feet, *Quarterly Statement*, Palestine Exploration Fund, 1877, p. 136.

‡ *Quarterly Statement*, Palestine Exploration Fund, 1877, p. 135.

§ There seems every reason to believe that the remaining portion of the Aqueduct is still in existence, and its discovery will throw considerable light on the topography of this portion of the city.

lower, and whose length is 46 feet. The two latter arches "appear to be very slightly pointed." * The covering arch is said to spring from the rock throughout its length on the eastern side.†

An old aqueduct which brought water from the north enters the north chamber of Souterrain I. This aqueduct will be described more fully hereafter; at present it is only necessary to notice its high level, 2,462 feet,‡ compared with that, 2,412 feet, of the aqueduct south of the souterrain, and the fact that on entering the Tarík Báb az Zahíre it leaves the rock and is built of masonry, which would seem to indicate the presence of a scarp facing east at that point.

There is then to the north of the north-west angle a rock-hewn ditch 165 feet wide and from 26 feet to 33 feet deep, the floor of which over the area covered by the souterrains, 165 feet by 46 feet to 50 feet, has been sunk to a further depth of from 13 feet to 24 feet. This ditch is not parallel to the northern boundary of the Haram, but has been cut perpendicular to a line representing the general direction of the ridge, the reason apparently being that the quantity of rock to be excavated was less on this line than on any other. The sides of the ditch cannot be traced beyond the limits of the souterrains. The north side is probably connected towards the west with the remarkable rock escarpment, page 33, which runs parallel to the *Via Dolorosa*, and towards the east there are some indications of a scarp running north; the limits of the south end on the east and west are unknown. An old aqueduct enters the ditch on the north, and leaves it at a much lower level on the south. About 100 feet south of the ditch is the scarp which has already been described as forming the northern boundary of the Haram. There is thus between the ditch and the Haram a mass of rock, 100 feet thick, which, at its highest point, is 63 feet above the floor of the souterrains, and 23 feet above the level of the Haram area. The western termination of this mass of rock is unknown; the eastern is possibly the unexplored scarp running north and south at a distance of 350 feet from the north-west angle. The rock runs southward along the western boundary of the Haram for a distance of 110 feet, where it ends in a scarp about 20 feet high, the course of which towards the west has only been traced for a short distance.

Our knowledge of the ground at the north-west angle is at present so imperfect, and the data which have been collected are so uncertain, that any attempt at reconstruction or to define the nature and object of the various excavations would be premature. There is,

* A plan of this souterrain is given on Litho. 26 of the Palestine Exploration Fund series.

† "Recovery," p. 202. M. Gauneau says that he has ascertained "by sight and touch the existence of the rock cut vertically along nearly the whole perimeter of the parallelogram"—that is, of the ground covered by the Souterrains I. and II. (*Quarterly Statement*, Palestine Exploration Fund, 1871, p. 106.)

‡ These levels can only be considered as approximate. They are taken from a sketch sent to me by Mr. Schick.

however, no doubt of the existence of a rock-hewn ditch, possibly that between Antonia and Bezetha, which runs generally in an east and west direction, and separates the mass of rock on which the barracks stand from the higher ground to the north. In excavating this ditch an old aqueduct bringing water from the north was cut through, and possibly a reservoir was then excavated in the bed of the ditch and vaulted to prevent evaporation, the aqueduct south of the ditch being deepened at the same time to allow the water to run off at a lower level. It seems also probable that the rock at the north-west angle was cut into its present form when the masonry with pilasters south of the Bab al Ghawânimé was built.*

North Wall to Birket Israil.

From the east end of the rock scarp beneath the Barracks to the Birket Israîl the wall is nowhere visible, as the ground rises to the level of the Haram and is covered with houses. In this space there are two gateways leading out by short streets to the Tarik Bab Sitti Maryam, the Bab al 'Atm and the Bab Hytta. The Bab al 'Atm† (Gate of Obscurity) is also called by Mejr ed Din the Bab al Dewatar, and the Bab Hytta (Gate of Pardon) is said by the same writer to derive its name from the command given by God to the Israelites to say "Pardon" as they entered it.

* Captain Warren, "Recovery of Jerusalem," p. 196-8, is of opinion that the souterrains are the twin pools, identified by Eusebius and the Bordeaux Pilgrim with Bethesda. M. Ganneau, on the other hand, believes that they cover the pool "Strouthion" mentioned by Josephus (B. J. v. 11. 4) in his description of the attack on Antonia during the siege of Jerusalem by Titus. M. Ganneau's view is that the pool was transformed into a closed reservoir at the period of Ælia Capitolina, that the stone pavement above the souterrains, extending to the Ecce Homo Arch, is of contemporary date, and that the Ecce Homo Arch is probably a triumphal arch for the victory over Bar Cochebas (*Quarterly Statement*, Palestine Exploration Fund, 1871, p. 6).

The following are the principal levels in this section :—

Street, Tarik ash Sheikh Rihan	2,482	feet
Aqueduct north of the souterrains	2,462 (?)	,,
Top of north scarp in souterrains	2,458	,,
Bottom of ,, ,, ...	2,419	,,
Top of south scarp in ,, ...	2,456	,,
Bottom of ,, ,, ...	2,399	,,
Scarp on west side of Souterrain I.	2,428 (?)	,,
Floor of aqueduct south of souterrains	2,412	,,
Top of scarp under Barracks north side of Haram ...	2,462	,,
Bottom of scarp ,, ,, ,, ...	2,432	,,
East end of scarp ,, ,, ,, ...	2,433	,,
Level of Haram at east end	2,419	,,
South end of scarp on west side of Haram	2,434	,,
Level of Haram at south end	2,431	,,
Via Dolorosa over the souterrains	2,448	,,

† According to Mejr ed Din, Omar entered by this gate on the day of conquest.

Birket Israil. The Birket Israíl is situated in a valley which takes its rise to the north of the city wall, and, passing between the ruin Al Mamûníyé and the Church of St. Anne, runs out into the Kedron Valley about 143 feet south of the north-east angle of the Haram. The valley at present is little more than a shallow depression, but Captain Warren's excavations have shown that in the lower portions of its course it assumes the character of a deep ravine, and that its bed lies no less than 139 feet or 140 feet beneath the surface of the Haram. It would appear then that the north-east corner of the Haram is made ground, and the south wall of the pool must consequently be almost entirely of masonry. The Birket Israíl is about 360 feet long, 126 feet wide, and 80 feet deep, but its great size can hardly be appreciated on account of the rubbish, which rises to a height of 35 feet above the floor. The rock at the bottom of the pool is covered by a bed of very hard concrete, 1 foot 4½ inches thick, made of "alternate layers of small stones and mortar," and this is finished off with 2½ inches of a "very hard and compact" plaster of cement and broken pottery. The surface of the plaster is at the level 2,325 feet. The south wall of the pool, which is also the north wall of the Haram, differs but little from the walls of other pools at Jerusalem, and has nothing in common with the fine mural masonry of the Haram. It is built of medium-sized stones set with wide joints, which are packed with small angular stones to give the cement a better hold. The masonry is irregular, and apparently of no very great age.* The north wall is of similar character, and here also there appears to be no rock. At the west end of the pool there are two parallel passages running westward along the Haram Wall, but unfortunately the vaults are cemented to the top of the arches, and the wall cannot be examined. The south passage, 134 feet long, is closed by a wall, the northern, at 118 feet, opens into a small modern passage running north and south which is now used as a sewer. The arches are slightly pointed, and their crowns are level with the top of the pool. The north passage has a concrete floor, which slopes towards the entrance, where there are four stone steps. The bottom step is nearly flush with the west wall of the pool, and beyond it is a landing 8 feet wide, and a series of irregular steps similar to those in Solomon's Pools at Urtas. Rock, falling to the east, was found 9 feet within the passage, at a depth of 40 feet below the crown of the arch, or at the level 2,365 feet, and it seems probable that the greater portion of the west end of the pool is rock. The east end of the pool is closed by a dam 45 feet thick, formed partly of rock †

* Captain Warren examined the lower portion of the masonry and found it to be precisely similar to that above. It is possible that this masonry may only be a facing to the Haram Wall proper, though not probable. The removal of a few stones would settle the question.

† The level of the bed of the pool is 2,325 feet, or from 18 feet to 50 feet below the level of the rock outside the wall on the east.

and partly of masonry. The character of this masonry will be discussed below. It is sufficient to mention here that it appears to be of more than one date, and is in part a continuation of the east wall of the Haram. Near the south end of the pool an old overflow aqueduct passing through the masonry of the dam was discovered by Captain Warren. The passage runs east and west, and is 46 feet long, 3 feet 9 inches high, and 2 feet wide. The west end is closed by a perforated stone having three round holes each 5¼ inches diameter,* and under this there appears to have been a basin to collect water. At the east end the passage opens out through the Haram Wall. On the south side is a staircase, apparently cut out of the solid after the wall was built, which rises to the surface in great steps 4 feet high, and about 12 feet from the east end there is a light shaft leading up to a small opening in the Haram Wall. Some of the stones in the sides of the passage are as much as from 14 feet to 18 feet long, and from 3 feet 10 inches to 4 feet 6 inches high. The roof is stepped down 4 feet about 11 feet from the west end. In the floor of the passage there is a neatly-cut channel 5 inches square which passes out through the Haram Wall, but in the next course below "a great irregular hole has been knocked out of the wall" to allow the water to run off at a slightly lower level, and so supply an aqueduct, 9 inches wide and 2 feet high, which runs east from the Haram Wall. The workmen in breaking through the masonry left a cross on the wall of a Byzantine type. The passage, which is said to be similar to that at the Single Gate in the South Wall, was evidently built at the same time as the wall or dam, and, if the perforated stone be taken as the level of the overflow, the water at this period could not have stood at a higher level than 2,347 feet, that of the floor of the pool being 2,325 feet. This gives an original depth of 22 feet to the Birket Israîl. During the Christian period it became necessary, for some reason, to break a hole through the wall to allow the water to run off through an aqueduct at a lower level, but at a much later date, if the aqueduct found outside the city wall near the north end of the pool may be taken as evidence, the water must have been at least 65 feet deep.†

A roadway passes over the dam at the east end of the pool and enters the Haram at the north-east angle by the Bab al Asbât (Gate of the Tribes).

* A sketch of this stone is given in "Recovery of Jerusalem," p. 165.

† The principal levels are :—

Bed of pool	2,325 feet	
Floor of overflow passage	2,345·5 ,,	
Level of perforated stone	2,347 ,,	
Rock east of pool outside city wall ...	2,343 ,,	to 2,375 feet
Rock at west end of pool	2,365 ,,	
Haram area, near north-east angle ...	2,417 ,,	
Roadway over dam	2,407 ,,	

N. E. Angle and East Wall to Golden Gate.

The nature of the north-east angle cannot well be discussed without an examination of city wall immediately to the north, and it will therefore be convenient to consider in this place the whole wall, from St. Stephen's Gate to the north-east angle of the Haram, and thence onwards to the Golden Gate.

Above Ground.

From St. Stephen's Gate to the so-called "Castle of Antonia," at the north-east angle, the wall is built of small-sized stones having no marginal draft, and between this masonry and that of the north-east angle there is a straight joint. In the "Castle of Antonia," which measures about 87 feet along the wall from the north-east angle, there are five courses of large stones, with 5½-inch marginal drafts, and above these, at the north end, there are portions of six other courses of similar character. The courses are from 3 feet to 4 feet high, and some of the blocks are of great size, one being 23 feet 8 inches long. The faces of the stones are better worked than nearer the south-east angle. The straight joint between this massive masonry and the city wall to the north shows that the two walls must have been built at different periods, but at the south end of the "Castle" there is no such break in the old masonry. The stones of the four lowest courses are properly bonded, and the marginal drafts are carried round the corner in such a way as to lead to the belief that the stones are *in situ*, though the joints are somewhat worn and irregular. The masonry of the upper portion of the "Castle" is of small stones, and bears traces of having been repaired more than once. Between the "Castle of Antonia" and the Golden Gate one, two, three, and occasionally four courses of large stones with marginal drafts and rough faces are visible; the lowest course projects about 1 foot 4 inches beyond the others, and seems never to have had the dressing of its face completed.* At the building called Solomon's Throne, about 110 feet north of the Golden Gate, the wall bends slightly to the east.

A narrow strip of almost level ground, thickly covered with Moslem tombs, runs along the wall from St. Stephen's Gate to the Golden Gate, but beyond this the ground falls steeply to the Kedron, except to the east of the Birket Israil, where a projecting mamelon has been formed by the rubbish which for many years has been thrown out of St. Stephen's Gate.

The excavations made by Captain Warren with a view of examining the wall beneath the surface at the north-east angle are without a parallel in the history of excavation; the deepest shaft reached the rock at 125 feet from the surface, and in one shaft alone no less than 600 feet run of shaft and gallery were excavated.† At a small offset in the wall, 34 feet south of St. Stephen's Gate, a shaft was sunk to the rock, which was

Beneath the Surface.

* Several of the stones in this part of the wall are fragments of old door jamb, and lintels; the upper masonry is of small stones.

† Full details of these excavations will be found in the "Recovery of Jerusalem," p. 159–188.

found 20 feet below the surface, at the level 2,390 feet. The wall is here built on a bed of concrete, 9 feet thick, which lies on the rock, and is composed of "stones about 6 inches cube and hard lime." A sloping gallery was next driven southwards along the wall from the top of the concrete for a distance of 44 feet 6 inches, when a shaft was sunk to the rock at the level 2,377 feet. There is no definite description of those portions of the wall seen in this shaft and gallery, but Captain Warren states that the wall is "of no very ancient date,"* and that "there is no appearance of an older wall,"† than the present one, which is of later date than the "Castle of Antonia." At 19 feet from the shaft the gallery passed a 3-foot wall of rough masonry lying east and west, and to the south of it a pavement of rude *tesseræ*, at the level 2,391 feet. At 38 feet the top of a barrel drain was crossed, and at 40 feet another wall. An examination of the drain led to the discovery of an aqueduct which apparently led from the Birket Israil at the level 2,390 feet. The aqueduct was followed for 39 feet. Its south side is built with large well-dressed stones, but it does not seem to be very old, and must have been built after the destruction of the old wall.

Another shaft was sunk at a point 97 feet due east of the north-east angle, and a gallery driven in from it towards the wall at the level 2,363 feet 3 inches. This gallery struck the wall at a point, P, 18 feet south of the angle, and was continued northwards along the wall for a distance of 75 feet. For 65 feet the stones in the wall are similar to those at the Wailing Place, but for the remaining 10 feet the stones are rough, with faces projecting from 6 inches to 10 inches, and well-cut marginal drafts.‡ No straight joint such as that visible above ground between the "Castle of Antonia" and the City Wall was noticed in the gallery. The wall runs on beyond the north-east angle without a break of any kind, and there is no projection. At a distance of 26 feet from the point P, an opening or slit 18 inches wide and 4 inches high was found, which proved to be a light shaft to the old overflow duct from the Birket Israil. At 64 feet there is a concrete floor ascending to the north. It may be observed that there is a distance of about 58 feet between the end of this gallery and that of the gallery from the shaft south of St. Stephen's Gate, and that the latter lies 14 feet above the former. This ground has never been explored, and it is therefore uncertain where, or in what manner, the change from the old to the modern masonry takes place.

At the point P, 18 feet south of the north-east angle, a shaft was sunk to the rock, level 2,327 feet 3 inches. For a height of 18 feet 1½ inches above the rock the wall is made up of six courses of stone with marginal drafts, and faces projecting in some instances as much as 25 inches; and above these seven courses of stones, like those in the Wailing Place, were

* "Recovery of Jerusalem," p. 161. † *Ibid.*, p. 170.

‡ The stones are said to be similar to those at the bottom of the Castle of Antonia.

examined. The shaft passed through layers of black earth and stone chippings. The rock at the bottom falls sharply to the south, and is cut into to receive the stones of the Haram Wall.

From the point P the gallery was also continued at the same level, 2,363 feet 3 inches, to the south corner of the "Castle," and here a shaft was sunk to the rock, which was found, at the level 2,293 feet 1 inch, to fall at a slope of 2 in 1 to the south. The fifteen lowest courses of the wall, making up a total height of 48 feet, are of stones with well-cut marginal drafts, and faces that project, on an average, 10 inches. Thus far each course is set back 4½ inches, but with the sixteenth course the development of the "Castle of Antonia" commences. This is effected by setting back the courses of the wall from 4 inches to 7 inches, whilst those of the "Castle" are set back only about 1¼ inches. At the level of the gallery, 70 feet above the rock, the "Castle" projects nearly 2 feet beyond the wall, and a similar rate of development continued to the surface would give the existing projection of 7 feet. There is no straight joint between the "Castle" and the wall to the south. As far as the masonry was examined the stones were cut out to the required depth, 2 feet; but above this they are, no doubt, properly bonded, like the four courses visible above the surface. The stones which form the face of the "Castle," commencing with the seventeenth course above the rock, are similar to those at the Wailing Place, while those in the wall to the south have rough projecting faces, and this style of masonry probably continues to the Golden Gate. It may be remarked, however, that the faces of these stones "are quite unlike the roughly-faced stones at the south-west angle." * On the third course from the rock, level 2,300 feet 9 inches, some red-painted characters were found. "The face of the stone was not dressed, but in the working of it a large piece had split off, leaving a smooth face, and on this the characters were painted. In one case the letter appeared to have been put on before the stone was laid, as the trickling from the paint was on the upper side." † In the eighth course one of the stones is patched up "with small stones and mortar, rendered on outside to look like stone." ‡ The shaft passed chiefly through layers of earth and large stones, but at 52 feet 5 inches it came upon a small drain, and at 58 feet a layer of dry shingle. The gallery, level 2,363 feet 3 inches, was continued along the Haram Wall to a point 75 feet south of the "Castle of Antonia," where loose shingle prevented further progress. The masonry consists of stones with marginal drafts and rough projecting faces. At a point 63 feet south of the "Castle" a shaft was sunk to a depth of 60 feet 6 inches, and galleries were then driven north and south along the Haram Wall for 18 feet and 41 feet 6 inches respectively. From these galleries three shafts were sunk, to determine the form of the bed of the ravine. The

* "Recovery of Jerusalem," p. 167. † *Ibid.*, p. 183.
‡ *Ibid.*, p. 183, called fourteenth course.

result showed that the bottom of the ravine is 61 feet south of the "Castle," at the level 2,278 feet 3 inches, or 125 feet 9 inches below the surface of the ground outside the wall, and 138 feet 9 inches below the level of the Haram at the north-east angle. The rock rises about 11 feet in 43 feet to the south, and about 10 feet 6 inches in 16 feet to the north. The courses in the Haram Wall are from 2 feet 10 inches to 4 feet high, and the rock is everywhere cut away in steps to receive the lowest stones. The masonry is all of one style, the stones having well-cut marginal drafts and rough projecting faces. On one stone, at the level 2,326 feet, a mark was found, but "it is difficult to say whether it is natural or not" The shaft at first passed through black earth, but at the level 2,344 feet 6 inches it came upon a bed of broken cut stone with marginal drafts, 13 feet 6 inches thick, resting on 5 feet of earth and gravel in alternate beds. This was succeeded by 13 feet of loose shingle and stone chippings, and beds of black or red clay and small stones. At the level 2,310 feet is the small drain met with to the north, and below it are *tesseræ* supposed to be Roman. At the level 2,301 feet broken pieces of pottery were found.

Several shafts were sunk to the east of the wall between St. Stephen's Gate and the "Castle of Antonia," with a view of ascertaining the natural features of the ground. The results obtained will be readily appreciated by reference to the plan, which shows approximately the contours. The rubbish found in the shafts was of similar character to that already described; two or three feet of red earth resting on the rock, and then successive layers of black earth and shingle. At one point an aqueduct,* apparently a continuation of that mentioned as running from the Birket Israil at the level 2,390 feet, was found, and a very massive wall of drafted stones lying north and south at a distance of 65 feet from the city wall. Towards the north the massive masonry gave place to well-dressed stones without drafts, and these again to a wall of small stones; southwards, after 19 feet, the wall turns to the west, and the stones here "have a curious cracked appearance as if they had been subjected to great heat." The stones in this wall differ in height and are not *in situ*.

General remarks on the N. E. Angle.

It would appear, then, that the masonry of the Haram Wall from the "Castle of Antonia" to the Golden Gate has certain characteristics not found in any other section of the wall; that at the Throne of Solomon there is a slight bend in the wall, which may or may not exist in the lower and older masonry beneath the surface; that the "Castle of Antonia" is of the same date as the wall to the south, and at its base in the same straight line, but that from the manner in which it is built it projects 7 feet at the present surface level; that the stones forming the face of the "Castle" from the point at which it commences its develop-

* "Recovery of Jerusalem," p. 178. † *Ibid.*, p. 179.

ment, are similar in all respects to those at the Wailing Place; that the north end of the "Castle," which is also the north-east angle of the Haram, is marked by no projection, the wall to the north being in line with the face of the "Castle;" that above the surface there is a straight joint between the old masonry of the "Castle" and the more modern masonry of the city wall to the north, whilst 44 feet below the surface the masonry of the "Castle" is carried on without a break for 57 feet, the stones for 47 feet being like those at the Wailing Place, and for 10 feet with projecting faces; that 114 feet 6 inches north of the "Castle" the city wall, of comparatively recent date, stands on a bed of concrete 10 feet thick, which rests upon the rock; and that 8 feet north of the "Castle" there is in the older masonry an overflow duct from the Birket Israîl at the level 2,345 feet 6 inches, that of the bottom of the pool being 2,325 feet. Unfortunately the line of junction between the older and later masonry north of the "Castle of Antonia" was not examined, and it is still uncertain how the old wall was finished off in this direction. It seems on the whole not unlikely that, when the "Castle" was built, the present north wall of the Haram at the Birket Israîl was the northern limit of the city, and that up to a certain height the masonry of the "Castle" was carried northwards to form a dam for the pool, then without the walls. At a later date, when the spur on which the Church of St. Anne stands was included in the city limits, the dam was raised to its present height, and the wall continued to the north. It is not easy to see why the builders of the east and north walls of the Haram should have carried the former across a deep ravine, and then almost immediately have turned westward and recrossed the same ravine to form the north wall. Possibly the rock scarp at the north-west angle was in existence at the time, and gave the direction of the north wall. The stone used at the north-east angle is "not so compact and hard as that used at the south-east angle, and the chisel-working is not so carefully done." The characters in red paint do not appear to have any significance.

The level of the rock beneath St. Stephen's Gate is 2,390 feet, and from this point it falls 112 feet in about 341 feet to the bed of the ravine (2,278 feet 3 inches); the rock then commences to rise, and at the Golden Gate, about 317 feet to the south, it has probably attained an altitude of 2,360 feet. The rock was everywhere found to be cut away or levelled to receive the stones of the lowest course of the wall.

The character of the rubbish throws no light on the history of the wall; from the fact, however, that the rubbish at St. Stephen's Gate, and for some distance to the south, is only 20 feet deep, it may be inferred that there has been no extensive destruction of buildings in this locality, and that the massive masonry of the Haram Wall never extended so far to the north.*

* The following are the principal levels :—

Surface of Haram at north-east angle ... ... 2,417 feet.

It is also evident that in order to raise the surface of the Haram area at the north-east angle to its present level the ravine has been filled up to a height of more than 120 feet, either by the gradual accumulation of rubbish, or by a system of vaults similar to that at the south-east angle.

Golden Gate. The piers of the Golden Gate are built of stones which have plain chiselled faces; the northern pier is not so well built as the southern, and stones taken from other buildings appear to have been used in its construction.* The piers are flanked by buttresses of more modern date, which were built to sustain the mass of masonry placed above the gateway when it was turned into one of the flanking towers of the wall, and the entrance was probably closed at the same period; to obtain the necessary slope or batter the buttresses were pushed forward four inches, and to take away the unsightliness of the projection the inner edges were chamfered.

The ground in front of the Golden Gate is so fully occupied by tombs that no excavations are possible, but Captain Warren attempted to reach the wall by sinking a shaft 143 feet from the south end of the gate, in a line perpendicular to its front, and then driving a gallery westward. The shaft was sunk to a depth of 26 feet 6 inches through loam with shingle, stone packing, and dark brown loam, and the gallery was then commenced. At 125 feet from the Haram Wall the mouth of a tank or rock-hewn tomb was passed at the level 2,311 feet; at 108 feet 9 inches a rock scarp with a rough masonry wall at the top;† at 79 feet 7 inches a portion of the shaft of a column, 3 feet in diameter, erect in the *débris*, 3 feet above the rock; and at 50 feet 9 inches a massive wall running north and south which stopped further progress.‡ The wall was traced 14 feet to the south without any break, but to the north it gradually turns to the west, apparently following the contour of the ground. The masonry is composed of "large quarry-dressed blocks of *missæ*," like those in the Haram Wall near the Golden Gate; the "roughly-dressed faces of the stones project about 6 inches beyond the marginal drafts, which are very rough." The stones appear to be in courses 2 feet 6 inches high, and the horizontal joints, about 12 inches wide, are packed with stones 6 inches cube, set in a curious cement said to be made of lime, oil, and the virgin red earth. The rubbish passed through in this excavation was of a most dangerous character, "loose

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Surface of ground outside Castle of Antonia	...	2,404 feet.
Rock at 34 feet south of St. Stephen's Gate	...	2,390 ,,
Bed of ravine 61 feet south of Castle of Antonia	...	2,278·25 ,,
Bed of Birket Israîl	...	2,325 ,,
Floor of overflow passage	...	2,345·5 ,,

* Some of the stones have reveals cut in them.

† On the scarp, about 2 feet 10 inches from the bottom, is a hole cut for a rope, similar to those in "Solomon's Stables."

‡ The rock level under the massive wall is 2,336 feet.

boulders alternating with layers of shingle," and it was not found possible to continue the galleries to the north and south, or break through the wall, which was penetrated, however, to a depth of 5 feet 6 inches. Another shaft was sunk 100 feet east of the Golden Gate in search of a tower said to have been seen by a fellah, but after reaching a depth of 27 feet it had to be abandoned on account of the loose and dangerous character of the rubbish.

The excavations show that, at the Golden Gate, the Haram Wall probably extends between thirty and forty feet beneath the present surface, and it is a question whether it does not stand on the foundations of a tower built, like that at the north-east angle, to project in front of the line of the wall. There seem, too, some grounds for supposing* that the massive wall reaches to the surface, and in this case there may have been at one time a terraced walk fifty feet broad in front of the Haram Wall.

Golden Gate to S.E. Angle.

From the Golden Gate to the so-called postern, a distance of 51 feet, there are three courses of large stones with marginal drafts 3 inches to 6 inches wide, and extremely rough faces, projecting in many cases as much as 9 inches. Over the doorway of the postern there is a sort of lintel, but there are no regular jambs, and the whole has more the appearance of a hole broken through the masonry and afterwards roughly filled up than that of a postern in a city wall; still it probably marks the site of Mejr-ed-Din's Gate of Burak. To the south of this there is a curious stone, hollowed into the shape of a basin, which on three sides is perforated by a round hole, and attached to one at the back is a portion of an earthenware pipe, which was probably at one time connected with the water-supply system of the Haram, and supplied a fountain at this place. Southwards from the postern the stones all have plain chiselled faces, and portions of several broken marble columns have been built transversely into the wall with their ends left projecting several inches; but shortly after passing "Mahomet's Pillar" the lowest courses are again built of stones with rough projecting faces and marginal drafts similar to those between the Golden Gate and the postern, and these stones extend to a break in the wall 105 feet 6 inches from the south-east angle.

An excavation was commenced 300 feet south of the Golden Gate, east of the cemetery, but when within 60 feet of the Haram Wall the shingle became too loose to work in. From one of the shafts at the south-east angle Captain Warren drove a gallery northwards along the tenth course of the Haram Wall, and at 108 feet from the angle he came upon a break in the wall corresponding to that above ground, and beyond this found an entire change in the masonry, the stones having marginal drafts and projecting faces similar to those already described as being visible above the surface. The gallery was continued

* "Recovery of Jerusalem," p. 159.

northward for 25 feet, when the bed of the course was found to rise 4 inches, and at a further distance of 28 feet 3 inches, or 161 feet 3 inches from the angle, the rock was met with, at the level 2,312 feet, "rising to the north and cut out for the reception of the stones." All the stones, from the break in the wall to the rock, a distance of 53 feet 3 inches, had projecting faces and marginal drafts. Between the point where the rock was struck and the Golden Gate the wall has nowhere been seen beneath the surface of the ground.*

S. E. Angle, Masonry above Ground.

At the south-east angle fourteen courses of stone, from 3 feet 6 inches to 6 feet 1 inch high, with marginal drafts, are exposed, giving a height of about 54 feet 2 inches above the surface. The stone in the seventh course from the ground, 6 feet 1 inch high, forms part of the "great course" which occurs at intervals in the south wall, and is the heaviest stone yet found in the Haram Wall. The bed of this course is on a level with the floor of the vaults known as "Solomon's Stables," which occupy the south-eastern corner of the enclosure. The courses as they rise are set back from $\frac{1}{2}$ inch to $\frac{3}{4}$ inch. Many of the stones in the wall, taken from the *malaki* beds, are much weather-worn, whilst others from the *missæ* beds retain their sharpness and are beautifully finished. On some of the stones are projecting bosses or tenons, the object of which is not clear. Similar projections may be seen in the wall of the Haram at Hebron, and also in the masonry of "David's Tower." Above the drafted stones there is about 23 feet 4 inches of modern masonry sadly out of repair, and looking as if the least touch would bring it down. The wall is thus 77 feet 6 inches above the present surface of the ground.

About 74 feet northward of the south-east angle there is an offset in the east wall, formed by notching out the stones, which marks the north end of the corner tower, and, as the marginal draft appears on both tower and wall, it would appear that the stones are in the position in which they were originally placed by the builders. A few feet to the north of the offset there are two stones which form the springing of an arch, and extend over a length of 18 feet. These stones do not appear to be *in situ*, and there is nothing in their appearance to justify the belief that they formed part of the arch of a bridge over the Kedron Valley.† They probably come from the ruins of the corner tower, as they are somewhat similar to some large stones in the building known as the "Cradle of Jesus," which formed part of the covering arch of a chamber in the tower. Immediately above the arch stones there is a chamber in the thickness of the wall which seems to have been a window, but one

* Captain Warren thinks that the old Temple wall of Solomon still exists in this section of the Haram Wall ("Recovery of Jerusalem," 153).

† Captain Warren searched for the pier of the supposed arch, but could find no trace of it a few feet above the rock. He believes that the "Red Heifer Bridge" commenced at a point 600 feet north of the south-east angle.

made at some period of reconstruction; both ends are now closed with masonry. At the north end of the arch stones, 105 feet 6 inches from the corner, there is a break in the wall, and then follows the roughly-finished masonry described above.* On the south face of the south-east angle the fourteen courses of drafted stones break down rapidly, and the ground at the same time rises sharply, so that within 100 feet of the corner only one course can be seen. There is no offset in the masonry corresponding to that on the east face. The inner faces of the stones in the east wall, exposed in the vaults of "Solomon's Stables," are left rough as they came from the quarry. In the angle itself there is a mass of very coarse rubble masonry, large blocks of stone thrown irregularly together, and the interstices packed with small stones and mortar, to which the finer masonry of the south-east angle is the facing. The inner faces were possibly finished off in the same manner. Above the rubble masonry is the mosque containing the "Cradle of Jesus," and here there is the springing of a heavy arch, which is apparently of the same age as the drafted work outside, and possibly formed part of the covering arch of a chamber in the tower.

Masonry beneath the Surface.

The masonry of the south-east angle beneath the surface was examined by several shafts and galleries. There are 21 courses of drafted stones, making up a height of about 80 feet 5 inches, or of 79 feet 3 inches above the rock, the lowest course being let into the rock. The five lowest courses are "in the most excellent preservation, as perfect as if they had been cut yesterday."† They are very well dressed, and, with a few exceptions, "differ in nowise from the perfect specimens above ground. The marginal drafts and about two inches round the projecting surface have been picked over with an eight-toothed chisel, about eight teeth to the inch; within this a 'point,' or single-pointed chisel, has been used."‡ For twenty feet beneath the surface the stones on the south face are "comparatively small with those visible above, and similar in every way to those at the Jews' Wailing Place."§ On the east face the courses are set back, as they rise, from 3 inches to 6 inches,‖ whilst, on the south face, they are only set back 1 inch. As the masonry of the south-east angle is somewhat peculiar, it will be necessary to examine each course uncovered more closely.

The *first* or *base* course is 3 feet 8 inches high; it is partially sunk in the rock at the angle, but proceeding northward it was found "to be let entirely into the rock until at about 41 feet it ceased, the rock rising

* Page 47.

† "Recovery of Jerusalem," p. 139. ‡ *Ibid.*, p. 139.

§ Letter I., p. 9, *Quarterly Statement*, Palestine Exploration Fund, 1867.

‖ The set-off is said to be 3 inches to 4 inches in "Recovery of Jerusalem," p. 149, and to be 6 inches in Letter VIII., p. 21, *Quarterly Statement*, Palestine Exploration Fund, 1867.

abruptly, and the second course being let into it." * There are drafts on the upper margins of the stones; the course rests on very hard rock, *missæ*, but the upper portion through which it is sunk is very soft and much decayed. The *second* course is 4 feet 3½ inches high; the first stone, 10 feet 6 inches long, has a 1-inch draft at top and an ordinary one at bottom; it is "very roughly dressed within the drafts." The second stone has an 8½-inch draft at top and 1⅝-inch at bottom, and is well dressed; the third stone has no draft at top, and a 16¾-inch draft at bottom; † the fourth stone has a 12-inch draft at top; the lower draft was not seen; the remaining stones have ordinary drafts of from 3 inches to 4 inches. The *third* course is 4 feet 2½ inches high, and is set back 4½ inches; the first stone has no draft at top, and a 4½-inch draft at bottom; the upper drafts of the remaining stones were not seen; the lower drafts are all 4½ inches; the second stone is "cut in a very superior style." The *fourth* course is 3 feet 7½ inches high, and is set back 2½ inches; the first stone has a shallow 9-inch draft at top, but except for this is "like the stones above ground;" the remaining stones have 9-inch drafts at top; the lower drafts were not seen. The *fifth* course is 3 feet 8 inches high,‡ and is set back 4 inches; the first stone is "similar in every respect to the best specimens of stones found at the south-east angle above the surface;" the third and eighth stones are very roughly dressed within the drafts; § the face of the eleventh stone "projects about ⅛ inch too much, and has been worked down over about half its surface." At 76 feet from the angle the rock crops up abruptly. The *sixth* course‖ is 3 feet 6 inches high; the first stone is 20 feet long from east to west, and its western end is let into the rock, which cuts its upper edge at 18 feet west of the angle. The *seventh* course is 4 feet high. One stone in the south face was exposed in the shaft sunk to the west of the Ophel wall; it had a 6-inch draft at top and bottom, and "the centre bulged out and was not dressed."¶ The *tenth* course, 3 feet 8 inches high, was found to consist of drafted stones similar to those at the surface, but at a point 64 feet 3 inches from the south-east angle, "the height of the course increased to 4 feet 2⅛ inches by being let down into the course below; this continues up to 108 feet from the south-east angle, where there appears to be a break in the wall; that is to say, the course in continuation is only 3 feet 3⅝ inches in

* "Recovery of Jerusalem," p. 147.

† "Recovery of Jerusalem," p. 148. This draft is said to be 13 inches ("Recovery," p. 144).

‡ "Recovery of Jerusalem," p. 138. At p. 333 it is given as 4 feet 2½ inches.

§ Captain Warren remarks on these rough stones that they do not appear "to form any pattern on the wall, and one is almost led to suppose that the builders were unable to find suitable dressed stones for breaking joint, and had to take those that were unfinished" ("Recovery of Jerusalem," p. 143).

‖ The south face only of this course was seen.

¶ This projection is said to be 9 inches on one of the lithographs of the Palestine Exploration Fund.

height, and its bed is 1 foot 10 inches above the course we had been running along; there appears to be a straight joint here through three courses, but of this we could not be certain." * Captain Warren states that at the break in the wall "a strong gush of wind issued during the east wind, but not during the west." This shows conclusively that the break runs up the wall to that noticed above the surface at a point 105 feet 6 inches from the corner. † Beyond the straight joint the stones have projecting faces. No trace was seen in the tenth course of the offset which marks the north face of the corner tower.

General remarks on S.E. Angle.

The angle of the corner stone of the base course, as measured by Captain Warren, is 92 degrees 35 minutes, and of the corner stone at the surface, 92 degrees 5 minutes; the general direction of the east wall, with reference to the south wall, as determined by the survey, is 92 degrees 50 minutes, or nearly 3 degrees beyond a right-angle. The wall at the south-east angle would appear to be made up of twenty-one courses of drafted stones beneath the surface, and fourteen above, giving a height of 134 feet 7 inches drafted work, and this, with the more recent masonry above, makes a total height of 157 feet 11 inches, or of 156 feet 9 inches above the rock. There are a few points connected with the masonry to which attention may be drawn. The very unequal width of the marginal drafts, and the occasional presence of stones with rough faces in the five lower courses, would seem to indicate a reconstruction, for Captain Warren's explanation of the latter feature can hardly be accepted; in the tenth course there has almost certainly been a reconstruction at the point 64 feet 3 inches from the south-east angle, where there is a change in the height of the course. An examination of the tenth course, the top of which is at the level 2,315 feet, also showed that the offset of the corner tower, which forms such a marked feature above the surface of the ground, is not continued to a depth of 40 feet beneath it. The straight joint 108 feet from the south-east angle, which appears to run a long way up the wall, and marks a distinct change in the style of the masonry, is exactly the same distance from the corner towards the north as the east face of the "Great Passage" beneath the Single Gate, which is built with drafted stones, is towards the west, and it is a question whether these two points may not possibly indicate the limits of the original structure, a corner tower unconnected with the walls.‡

* "Recovery of Jerusalem," p. 150.

† If, as there is some reason for supposing, there was once a tower at the south-east angle unconnected with the wall, the difference between the two dimensions, 105 feet 6 inches and 108 feet, would correspond exactly to the batter of the northern and southern faces, 1 foot 3 inches for each face.

‡ The Haram Wall was not seen above or below the Great Passage, so that the existence of a straight joint in the masonry at that point is at present a matter of speculation.

The Rubbish. The rubbish at the south-east angle consists "of stone chippings, alternating with layers of fat earth, and in some places rough stones about a foot wide;"* immediately above the rock there is a layer of fat mould abounding in fragments of pottery, which "slopes to the east at an angle of about one in four;"† this mould "does not lie close up against the Haram Wall, but is at top, about 12 inches from it, and gradually closes in to it; between it and the wall is a wedge of stone chippings; it is quite evident that when the wall was built, this 10 feet of mould and pottery was in existence, that it was cut through, and the soft rock also, for the purpose of laying the stones on a solid foundation."‡ The layers of stone chippings above the mould slope to the east at about one in three, but at one point "they slope in towards the Haram Wall, instead of away from it;"§ the chippings at the base of the wall "are in many cases rounded and unlike what would result from stone dressing, having more the appearance of the backing used in the walls at the present day in Palestine;" ‖ a black substance somewhat like charred wood was found amongst them. Four feet below the surface the "Ophel Wall" was found; it abuts against the south face of the south-east angle with a straight joint and extends down to, and rests upon, a "hard layer of clay" which overlies the rock; west of the Ophel Wall there is a 4-foot wall of hard *missæ*, which runs parallel to the Haram Wall, and at a distance of 15 feet from it. In driving a gallery from a shaft 20 feet south-east of the south-east angle, Captain Warren passed through "two rough masonry walls, running respectively north and south and east and west." ¶ Between the south-east angle and the Kedron, all attempts to reach the rock by shafts or galleries from the surface were unsuccessful, owing to the quantity of "dry loose shingle lying at an angle of 30 degrees," which, "when it got a start, ran like water;" the shingle, stone chippings without a particle of earth, was, in character, almost a fluid.

The Rock. The rock at the south-east angle is very soft and much decayed, but apparently *missæ;* it rises 18 feet 4 inches in 76 feet to the north, and about 21 feet in 18 feet to the west; on the east it is nearly level for 8 feet or 10 feet, and then falls away at a slope of about one in nine to the Kedron.**

* "Recovery of Jerusalem," p. 137.
† *Ibid.*, p. 142.
‡ *Ibid.*, p. 141.
§ *Ibid.*, p. 139.
‖ *Ibid.*, p. 144.
¶ *Ibid.*, p. 138.

** The true bed of the Kedron is 65 feet west of the apparent one, and 38½ feet below it. The rock rises gently to the west for 60 feet, then more abruptly at an angle of about 30°. From the south-east angle of the Haram Wall to the true bed of the Kedron, 240 feet due east, the rock has a total fall of 106 feet. There is no perennial stream in the Kedron, but after heavy rain water flows along its bed. In driving his gallery up the western bank, Captain Warren found several walls, apparently built to support terraces.

Four feet north of the angle the rock near the wall is cut away "in the form of a semicircle or horseshoe, 2 feet wide and about 2 feet 8 inches deep."

The Characters. The characters found by Captain Warren on the lower courses of the east wall at the south-east angle are either cut into or painted on the stones. The incised characters are cut to a depth of $\frac{3}{8}$ inch; the painted characters, some of which are 5 inches high, were probably put on with a brush; they are in red paint, apparently vermillion, and easily rubbed off with awetted finger. There are also "a few red splashes here and there, as if the paint had dropped from the brush." * The characters are irregularly distributed over the stones; in the second course the second and third stones from the corner have characters; in the third course the first stone has one character, the second none, the third, fourth, and fifth "a few faint red paint marks," the sixth an incised character; in the fourth course no marks were seen; in the fifth course nearly every stone, except the first, has one or more characters, and in seven instances there is a character at the left-hand top corner of the stone; the first, or corner stone of this course, has two characters on its south face. No characters were seen in the tenth course.

These *graphiti* were examined by the late Mr. Emanuel Deutsch, and the conclusions which he came to were as follows:—I. "The signs cut or painted were on the stones when they were first laid in their present places. II. They do not represent any inscription. III. They are Phœnician. I consider them to be partly letters, partly numerals, and partly special masons' or quarry signs. Some of them were recognisable at once as well-known Phœnician characters; others hitherto unknown in Phœnician epigraphy I had the rare satisfaction of being able to identify on absolutely undoubted Phœnician structures in Syria." Mr. Deutsch adds that he thinks "all attempts to determine the exact meaning of each and all of these technical signs would, at least at this stage, be premature." †

The Pottery. The pottery obtained by Captain Warren during the excavations at the south-east angle consists of: (*a*) a small jar found in a hole cut out of the rock, "standing upright, as though it had been purposely placed there;" ‡ (*b*) fragments, amongst which there was a "long rusty iron nail," from the bed of clay or rich mould, 10 feet thick, which overlies the soft rock; and (*c*) fragments from a layer of broken pottery about 2 inches thick which rests on the mould. (*a*) It has been suggested that the small jar was placed in the hole when the wall was built, and that it might therefore give some indication of the age of the masonry at the

* "Recovery of Jerusalem," p. 139.

† *Quarterly Statement* of Palestine Exploration Fund, No. 2, 1869, p. 35.

‡ "Recovery of Jerusalem," p. 141. The hole is 1 foot wide, 1 foot deep, and situated 3 feet east of the south-east angle.

angle. Dr. Birch, probably the highest living authority on such matters, states that it is just possible that the vase, which resembles Egyptian ware in shape, might be as old as the fourth or fifth century B.C.* Mr. Greville Chester observes that the vase "is of pale red ware, and of a common Græco-Phœnician type." † (*b*) Amongst the fragments from the mould are several broken lamps "of red or brownish ware," with one, two, or three lips," which "seem adapted for the burning of fat rather than oil." Lamps of the same design have been found in Cyprus and Malta, and Mr. A. W. Franks considers them "to be of late date—not earlier than the second century before the Christian era." ‡ (*c*) From the layer of broken pottery six vase handles were brought home, each of which "bears impressed upon it a more or less well-defined figure, resembling in some degree a bird, but believed to represent a winged Sun or Disc, probably the emblem of the Sun God, and possibly of royal power." § There are Phœnician characters, similar in shape to those of the Moabite stone, on each handle, above and below the wings, and in two instances they have been read by Dr. Birch as follows:—

LeMeLeK ZePHa	To or of King Zepha.
LeK SHaT	King Shat.

M. Ganneau, on the other hand, transcribes the inscriptions as—

MoLoCHZaPH
LoCHSHaT

and believes them to be the names of men composed partly, like Hannibal, of the name of a god, Moloch. In this case it might possibly be the potter's name. Another handle found in the same place bears as a potter's mark "a cross within a semicircular mark." Captain Warren supposes "the jars to have been broken only a very short time after the building of the wall," and says "it is obvious that these characters are likely, in a great measure, to throw light upon the age of the Sanctuary wall at this point." ‖ The use of these characters, however, does not afford any positive evidence as to age, for, as in the inscriptions on coins, they may have been retained on potters' stamps and as masons' marks for many years after the Christian era. There is thus at the foot of the wall at the south-east angle masonry of a peculiar character, not apparently of the best building period, the stones of which bear painted or incised masons' marks and Phœnician letters. In a hole in the rock in front of the wall a jar was found, which may be as old as the fourth or fifth century B.C. Above the jar was a bed of mould abounding in fragments of lamps, not earlier in date than the second century B.C.;

* *Quarterly Statement*, Palestine Exploration Fund, 1877, p. 75. Dr. Birch describes the jar as being of "rather rude shape and coarse terra-cotta."

† "Recovery of Jerusalem," p. 476.

‡ *Ibid.*, p. 475-6.

§ *Ibid.*, p. 473.

‖ *Ibid.*, p. 152.

and resting on the mould a layer of broken pottery, from which jar-handles with Phœnician inscriptions were obtained. If the date assigned to the jar be any indication of the age of the wall, the construction of the south-east angle may be due to Nehemiah, and perhaps a reconstruction of the "tower that lieth out."

S.E. angle to the Triple Gate.

The fourteen courses of drafted stones visible at the south-east angle break down rapidly towards the west, and near the Single Gate, about 105 feet from the corner,* only one course can be seen. Above this there are three courses of large stones plain dressed, and then several courses of small stones similarly dressed. The masonry of the upper portion of the wall is of no great age.

The Single Gate.

The *Single Gate* is a closed entrance with pointed arch of comparatively modern construction, which formerly led to the vaults called "Solomon's Stables." Its sill is about 3 feet 9 inches below the level of the floor of the vaults. Between the Single and Triple Gates only one course of drafted stones is visible, and the masonry above it is similar to that already described. The chief feature of this section of the wall is the "Great Course," a name which Captain Warren has given to a course of drafted stones from 5 feet 10 inches to 6 feet 1 inch high, that extends continuously for a distance of 70 feet west of the south-east angle, and can be traced thence, at intervals, to the Triple Gate.† Its bed is on a level with the sill of the Triple Gate and the floor of Solomon's Stables. The bed of the course is a straight line, but falls away towards the east, so that it is about 2 feet 6 inches lower at the south-east angle than at the Triple Gate. "On account of the peculiar nature of the ground" this arrangement would be required, according to Captain Warren, "to avoid offending the eye."

The Great Course.

The masonry at the south-east angle has been described above (p. 51). About 77 feet from the corner the wall was examined for several feet below the surface,‡ but there appears to be no record of the measurements made. At a distance of about 108 feet from the south-east angle, and immediately beneath the Single Gate, is the "Great Passage," discovered by Captain Warren in 1867. This passage, 69 feet long, 3 feet wide, and "probably from 12 feet to 18 feet high," is perpendicular to the south wall of the Haram and lies under one of the aisles of Solomon's Stables. Its floor appears to be about 30 feet below that of the vaults, and about 11 feet above the rock. The masonry contains stones of large size, and

The Great Passage.

* This is exactly the same distance from the south-east angle as the straight joint in the east wall.

† There is only one stone *in situ* between the Single and Triple Gates.

‡ Letter XXI., Jan. 1st, 1868, *Quarterly Statement*, Palestine Exploration Fund.

nearly all have marginal drafts and are "beautifully worked, but some of them are only hammer-dressed." The passage is covered by large stones, in many instances having marginal drafts, which are laid flat on the side walls. At a distance of 69 feet* from the entrance, however, these roof-stones disappear. There are two entrances, one above the other, separated by the thickness of a course of stone, and 7 feet from them are "indications of there having been a metal gate." The inner end of the passage is closed with broken stones and rubbish, and appears to have been "filled up before the piers of the stables were built."† On the east side a small passage was opened out to a depth of 6 feet 6 inches, when a shaft, filled with rubbish, was found leading upwards. This was cleared for 9 feet and then abandoned on account of excitement in the city. At the bottom of the upper course on each side of the wall are "the remains of a small aqueduct jutting out from the wall, made of dark cement."

The object and nature of this passage are exceedingly obscure. Captain Warren, in the "Recovery of Jerusalem,"‡ states that he has no clue to its use; but in a more recent work—"Underground Jerusalem"—he identifies it with the passage which carried off the blood from the altar.§ It has already been pointed out that the east side of the passage may possibly be the west face of a corner tower unconnected with the city walls; and the fact that the side walls and roof contain many stones with marginal drafts, beautifully worked, intermixed with others hammer-dressed, seems to point to a period of reconstruction. It can hardly be supposed that drafted stones dressed with so much care would be placed in a dark passage, 3 feet wide, where no one could see them, and it is a question whether the "Great Passage" does not owe its origin to a modification, at some period, of the original form of the South Wall. The question would at once be set at rest by an examination of the wall below the opening, where a straight joint must exist if the corner tower were ever a detached building. Unfortunately Captain Warren was unable to examine the wall either above or below the

* The distance is given as 69 feet, "Recovery of Jerusalem," p. 133.

† Captain Warren's address at annual meeting of the Palestine Exploration Fund, June 11th, 1868. Captain Warren says in Letter XVII., November 22nd, 1867, "It is evident that the passage has been filled up intentionally, and as there are some very large stones jammed together at the end, I don't see how we are to get through them."

‡ Page 134.

§ Page 71. It would seem much more natural to identify one of the rock-hewn passages under the Triple Gate with the blood passage, which would hardly have been built of masonry, and discharged its contents down the face of the great retaining wall at a height of 11 feet from the ground. Captain Warren, however, informs me that there was a drain leading from the Great Passage, which had become damaged. This drain must have been of much later date than the passage itself.

opening.* and the positions of the stones in the passage which have marginal drafts cannot be indicated on the plan.

A shaft was sunk 37 feet south of the Single Gate, but it had soon to to be closed on account of the dangerous nature of the rubbish, and a second shaft commenced 14 feet south of the gate. This shaft, after passing through 20 feet of rough stones and rubbish, and 10 feet of firm soil having a dark-brown colour, reached the rock at 34 feet 6 inches from the surface. A gallery to the Haram Wall, at a height of 11 feet above the rock, struck the entrance to the Great Passage.

The rock was not seen between the south-east angle and the Triple Gate, but beneath the Single Gate it is probably about one foot higher than the level at the bottom of the shaft mentioned above;† this would give a rise of 60 feet in 105 feet from the south-east angle to the Single Gate, and of 41 feet in 180 feet from the Single to the Triple Gate.

The Triple Gate. The Triple Gate consists of three openings in the wall, now closed with small masonry, which formerly gave access to three vaulted passages running north, and perpendicular to the Haram Wall. The gates are each 13 feet wide and covered by semicircular arches; the piers are 6 feet wide, and the stones of piers and arches have plain dressed faces. Behind the semicircular arches, which are 4 feet 8 inches deep, the openings widen, and are spanned by elliptical arches which have a rise of 3 feet 11 inches, and are 8 feet deep; these again are succeeded by segmental arches, each of which has a different span. The piers or jambs of the gate as seen from the inside appear to have been built with old material; in those of the west opening the lowest courses have portions of engaged columns built into them. They have no bases, and that on the west, which seems to have been cut out of an older wall, is let into the rock about 6 or 8 inches. The Haram Wall forming the jamb of the eastern opening is entirely composed of small stones with plain dressed faces, and the jamb of the western opening is of similar character, with the exception of the lowest stone, which forms part of the "Great Course," and has a sort of architrave moulding, apparently worked when the gateway was built. On the face of this stone some Hebrew characters can be traced. Immediately above the arches is a a plinth course, and above this the wall is of mixed character, containing small stones dressed plain, and others with marginal drafts and rough projecting faces.

It seems doubtful whether the Triple Gate is as old as the date generally ascribed to it, the reign of Justinian, but on this point some

* Captain Warren, "Recovery," p. 332, gives the heights of three courses of stone below the passage. These courses, however, were not seen, and the rock-level is estimated from the results at a shaft 14 feet south of the Single Gate.

† Captain Warren gives the level of the rock as 2,361 feet, "Recovery of Jerusalem," p. 333. This is evidently an error, as, making allowance for a slight rise from the bottom of the shaft to the foot of the wall, it cannot be more than 2,337 feet, which I have adopted.

light may hereafter be thrown by a closer examination of the mode in which the stones are dressed than has yet been made. The gateway appears to have been built after the removal of a portion of the "Great Course," and to be of the same age as the arches over the recesses in the western wall of the passage, which are cut out of the solid masonry of an older building. It may be noted that the openings are only 13 feet wide, whilst those of the Double Gate, Barclay's Gate, and Warren's Gate, are from 18 to 19 feet wide. The only traces of an older gateway on this spot are the portions of engaged columns built in at several places in the vaults and the lintel forming part of one of the piers in "Solomon's Stables."

Passages under the Triple Gate.

In front of the Triple Gate are some large flat slabs of stone, which perhaps formed part of a flight of steps leading up to it, and beneath them are two interesting rock-hewn passages, first brought to notice by Mons. de Saulcy, and afterwards more fully explored by Captain Warren.* The western passage forks a few feet south of the Haram Wall; the west branch, 3 feet 6 inches wide, has a channel sunk in its floor, as if it had been used as a drain or water channel;† the east branch is 4 feet 6 inches wide, and rises very rapidly about 16 feet in 52 feet. There are the remains of a doorway near the point of junction, which would seem to indicate that it was a secret passage. The eastern passage is entirely rock-hewn beneath and on the northern side of the Haram Wall, but to the south it is roofed with flat stones laid horizontally or at an angle; on the left-hand side going towards Siloam there is a small cistern, and a little beyond the passage winds about, apparently following the foundations of some old building, the stones of which are well dressed, but have no marginal drafts. This portion is either of later date or has been cut through in sinking for the foundations of the building; the masonry rests on the rock, and the end is closed with rubbish. These passages communicate with Cistern No. X. at different levels, as well as with the passage from the Triple Gate, and with a passage running northward which seems to be similar in character to a rock-hewn passage a little to the west of Cistern No. VII., and may possibly be a continuation of it. The passages are cut out of the *malaki* bed, and their floors are about 19 feet 4 inches below the level of the surface in front of the Triple Gate.

The Triple Gate to the Double Gate.

West of the Triple Gate there are two courses of stones with marginal drafts visible above ground, and one of these, the "Great Course," extends almost to the Double Gate; the stones are finely finished, with

* The above description is partly from my own notes, made during a visit to the place in 1865, and partly from Captain Warren's account.

† A similar arrangement was noticed by Mr. Eaton at Khureitun, and by Captain Warren in the aqueduct near David's tomb.

plain picked faces, and they have a 3¼-inch draft chiselled round their margins. Above the "Great Course," near the Triple Gate, the stones are small, with plain dressed faces, but as the Double Gate is approached the courses increase in height. These two styles of masonry correspond with those previously described as overlying, in successive zones, the drafted work between the south-west angle and Robinson's Arch, and they apparently indicate two building periods. The upper portion of the wall is of small stones, some plain dressed, others with marginal drafts and rough projecting faces.

At a point about 120 feet west of the Triple Gate three courses of stone were bared,* but the shaft was not carried to the rock. The stones are similar to those at the Wailing Place. The rock was seen in a cistern about 190 feet west of the Triple Gate at a depth of 23 feet from the surface, so that the original form of the ground can be laid down approximately.†

The Double Gate. The Double Gate consists of two entrances, now closed, which formerly opened into a vestibule, whence there was an ascent to the Haram area by a vaulted passage perpendicular to the line of the wall. The buildings of the Khatuniyeh almost conceal the gate; part, however, 5 feet 8 inches of the eastern entrance, is exposed, and the pier which separates the two gates can be partially examined in the Khatuniyeh vaults, which can be entered from the vestibule. The total width of the Double Gate is 42 feet, that of the pier 6 feet, so that each entrance is 18 feet wide, corresponding in this respect very nearly with "Barclay's" and "Warren's" gates in the west wall. The two openings are covered by lintels, the inner ends of which rest on the pier; above the lintels are relieving arches, and over these a cornice; each lintel is further supported by two columns, with capitals and blocks of stone above to make up the required height. The masonry of the pier is in all respects similar to that of the Wailing Place, but the stones are much weather-worn; the lintels have broad marginal drafts and finely dressed faces; the wall, however, on which the outer ends of the lintels rest, is of a different character, the stones being plain dressed without drafts, and on the eastern side the jamb is roughly built. The appearance of the masonry on either side of the gateway is such as to lead to the belief that in its present state the Double Gate is a reconstruction with old

* In Letter I., August 22nd, 1867, *Quarterly Statement*, P.E.F., the wall is said to have been bared for 16 feet; there is no drawing, but in the table of courses, "Recovery of Jerusalem," p. 332, three courses are given, making a height of 11 feet.

† The rock levels obtained from cisterns are not very satisfactory; they show that the rock cannot be lower, but it may rise nearer to the surface than the point seen in the cistern.

material. Immediately under the lintels are two ornamented arches, which form no part of the wall, but are simply fastened on to it with metal cramps; it is a clumsy piece of work, and now almost falling; the style of ornament is similar to that at the Golden Gate. Adjoining the eastern relieving arch is the Antonine inscription, built into the wall upside down; most of the letters still retain their sharpness, and can be read from the photograph with the aid of a magnifying-glass.* Captain Warren estimates the level of the rock at 30 feet below the sill of the gateway, and there must therefore have been an ascent by a ramp or steps.

The Double Gate to the S. W. Angle.

The wall immediately west of the "Double Gate," exposed to view in the vaults of the Khatuniyeh, shows a mixture of stones with marginal drafts and large stones with plain dressed faces; but from thence to a point about 90 feet from the south-west angle the latter only are found; the remaining portion of the wall is of drafted stones, similar to those in the Wailing Place, four courses being visible at the south-west angle. The plain dressed stones are irregularly jointed on to those with marginal drafts; the courses vary in height, and the stones are not well laid, the joints having "a wavy appearance," and acting as weepers. The upper portion of the wall, in which are the windows of the building al Baka'at al Ba'idha, is built of small stones with marginal drafts and rough projecting faces, intermixed with stones having plain dressed faces.

The masonry beneath the surface was examined by four shafts sunk by the side of the Haram Wall. In Shaft No. I., 213 feet from the south-west angle, the rock was met with at 54 feet 10¼ inches below the present level of the ground; this height was found to be made up of fifteen courses of stone, from 3 feet 4½ inches to 4 feet in height. The stones in the first six courses above the rock have marginal drafts and rough projecting faces like those described below in Shaft II.; those of the next two courses have marginal drafts and roughly-dressed faces, whilst those of the remaining seven courses are similar to the stones in the Wailing Place, though much weather-worn. A rough wall abutting on the Haram Wall was met with in the excavations, and the rock at the bottom of the shaft was found to fall to the west, and to have been cut away to receive the lowest course. In Shaft II., 90 feet† from the

* The inscription is: TITO AEL*io* HADRIANO AVG*usto* PIO P*atri* P*atriæ* PONTIF*ici* AVGVR*i* D*ecreto* D*ecurionum*.

† In Captain Warren's early letters, published in the *Quarterly Statements* of the Palestine Exploration Fund, this shaft is always said to be 40 feet from the south-west angle, and the same distance is given on a drawing dated October 2nd, 1867. On later drawings, and in the "Recovery of Jerusalem," the distance is given as 90 feet, and this has been adopted in the plans, &c.

south-west angle, the rock is 87 feet 6 inches beneath the surface, the height being made up of twenty-four courses from 3 feet 6 inches to 3 feet 9 inches high; the foundation stone has a marginal draft and is finely dressed; the stones of the next fourteen courses from the rock have finely-worked marginal drafts, from 4 inches to 6 inches wide, and rough three-cornered faces projecting in some instances 18 inches beyond the drafts as if they had not been touched after leaving the quarries; the stone of the sixteenth course has a face projecting 3 inches beyond the draft, that of the seventeenth course has a roughly-dressed face, whilst the stones of courses eighteen to twenty-one are similar to those in the Wailing Place, but much worn, and those of the remaining three courses are plain dressed without drafts. The stones are well fitted, the joints being "hardly discernible," and so close that "the blade of a knife can scarcely be thrust in between them;" the courses are set back 1 inch to give the wall a batter. At 12 feet 6 inches from the surface the shaft came upon a pavement of well-polished *missæ* stones, 12 inches by 15 inches, and beneath this passed through 16 feet of "concrete of stones, bricks, and mortar, in which the seal of Haggai* was found; at 28 feet 6 inches the shaft entered a 5-foot stratum of loose stones and shingle, and at 33 feet 6 inches came upon larger stones, and the top of a rubble wall abutting on the Haram Wall; at 79 feet it reached the covering stone of a passage running south, at 85 feet the bottom of the passage, and at 87 feet 6 inches the rock. The passage is of rubble masonry 4 feet and 2 feet wide, with flat covering stones. It was cleared out for 600 feet, and appeared to follow the bed of the central ravine, the rock rising on either side of it. At 350 feet from the wall a drain runs in from the east. The passage starts at once from the Haram Wall, and seems to have been cut through when that wall was built. At the foot of the shaft, galleries driven to the right and left showed the rock rising to the east and west. In Shaft III., 64 feet 6 inches from the south-west angle, eight courses of stone, from 3 feet 4 inches to 3 feet 10 inches in height, were exposed, but the shaft was not carried down to the rock; all the stones have marginal drafts, but those of the upper courses are much weather-worn: the stones with rough faces were found to commence at the same level as those in Shaft II. At 15 feet 6 inches from the surface there is a rough pavement of stones 12 inches cube, and beneath this the stones in the Haram Wall are better preserved. In Shaft IV., at the south-west angle, thirteen courses, from 3 feet 4 inches to 4 feet high, were bared; the shaft was only continued to the upper course of stones with rough faces, which is at the same level as in the other shafts. At 23 feet from the surface there is a pavement, at 25 feet several Christian lamps were found, and at 38 feet there is a second pavement.

* This seal is inscribed "Haggai, the son of Shebaniah," and is supposed to be at least as old as the Maccabæan period.

Result of the Excavations.

The excavations seem to show that the masonry of the Haram Wall between the "Double Gate" and the south-west angle is composed, up to the level of 2,344 feet, of stones with rough projecting faces; that there are then two courses of stones with carelessly dressed faces, reaching to 2,351·6 feet, and above these four courses, similar to the Wailing Place masonry, attaining a level of 2,366·3 feet. At the south-west angle there are ten additional courses of drafted stones, but the plain dressed stones begin to show themselves in Shaft II. at 2,366·3 feet, and it is clear that at this point no less a height than 54 feet of the massive masonry has been overturned, and the wall reconstructed at different periods. As far as the drafted stones are concerned the wall, throughout this section, is evidently of one construction, and if the courses are compared with those in the west wall they will be found to run through to Wilson's Arch.

The Rubbish.

The chief features in the rubbish are the two pavements, and the zone of Christian pottery between them; the upper pavement extends from the south-west angle at least 90 feet along the wall;* the lower pavement, 20 feet beneath, was only seen in Shaft IV. Among the fragments of pottery were several Greek lamps, one with "an inscription of Christian origin, similar to those on lamps which have been considered to be of the third or fourth centuries." The pieces of pottery appeared to have been "lying in the position in which they were found when this upper pavement was laid, and if so we must suppose it to have been made after the third or fourth century." † The relation of the rubbish to the stones with rough projecting faces is here of much interest. Captain Warren considers that this portion of the wall was built "after the Tyropœon had commenced to fill up," and that "the rough stones below the pavement were never exposed to view.‡ On the other hand, it is hardly possible to believe that rubbish had accumulated to a depth of over 50 feet in the central ravine before the date of Herod's reconstruction, or that such a mass of *débris* could have been removed when the solid wall was built. The erection of one or more retaining walls to finish off the southern end of the rubbish would in itself have been a work of great labour. The effect produced by the highly finished masonry resting on a sub-base of bold rugged work would be at once grand and striking, and it would almost seem as if the two courses of stone with rough but not projecting faces were intended to soften the line of junction between the two styles of masonry. The passage at the bottom of Shaft II. seems to have been an old channel to carry off the drainage of the central ravine, but it seems strange that no drain was found beneath the Haram

* Captain Warren thinks this pavement extended to Wilson's Arch, and was the surface level during the Latin kingdom; it does not, however, appear to have been seen in the shafts along the west wall.

† "Recovery of Jerusalem," p. 124. ‡ *Ibid.*, p. 122.

Wall, as there must always have been a flow of water down the ravine after rain, unless the water running under Wilson's Arch was conveyed by some means into the rock-hewn cisterns north of Robinson's Arch.

The natural bed of the ravine is at the bottom of Shaft II., thence the rock rises about 30 feet in 90 feet to the west, and 32 feet in 123 feet to the east.

General View of the South Wall.

The south wall of the Haram is 921 feet long, and broken into three sections by the Double and Triple Gates, which are 330 feet and 588 feet respectively from the south-west angle. The present surface of the ground from the south-west angle to the Triple Gate is nearly level, but thence it falls about 23 feet to the south-east angle. This is due to the enormous accumulation of rubbish, which entirely conceals the natural features. These are very different. The highest point of the rock is under the Triple Gate, about 2 feet below the sill, at an altitude of 2,378 feet, thence it falls eastward 101 feet in about 310 feet to the south-east angle, where the level is 2,277 feet, and there is a further fall of 106 feet in 240 feet to the true bed of the Kedron (2,171 feet). West of the Triple Gate the rock falls 88 feet in about 520 feet to the bed of the Tyropœon (2,290 feet), which is 90 feet east of the south-west angle, and thence there is a rise of about 31 feet in 90 feet to the south-west angle.

The masonry of the south wall has some special features which deserve notice. At the south-east angle the stones are as a rule well dressed, with marginal drafts of very unequal width, but in some cases they are roughly dressed or have projecting faces, and occasionally the drafts are not carried right round the stones. At the Single Gate and "Great Passage" there is some reason for supposing the existence of a straight joint, whilst in the Tyropœon Valley the masonry for a height of 54 feet is of stones with rough projecting faces. One of the most marked features is the "Great Course," which, owing to the form of the ground, is the first that could have been carried through from end to end. There is, however, no trace of it west of the Double Gate, or at the south-west angle, where the stones are certainly *in situ*. It is hardly possible to believe that the builders of the wall west of the Double Gate would have neglected to carry the "Great Course" on to the south-west angle had it been in existence at the time, as, being on a level with the sill of the Double Gate, it would, if not carried on, have been an eyesore to every one entering the Temple by that approach; and if Herod were the builder of the south-west angle it is quite certain he would not have allowed his masonry to fall short of any previously in the wall. The "Great Course" may thus be of comparatively recent date. Another point for consideration is that from Wilson's Arch to the Triple Gate the courses of stone are, through-

The "Great Course."

out, nearly on the same level,* and that the masonry appears to be of one construction, but when the south-east angle is reached there seems to be a distinct change in every respect. Unfortunately there was no complete examination of the wall between the south-east angle and the Double Gate, and its character must still to a great extent be matter of speculation.

Captain Warren believes the wall east of the Double Gate to be older than that to the west, and ascribes the former to Solomon, the latter to Herod; he appears to base his opinion on the position of the "Great Course" to the east, and not to the west of the Double Gate, and on the fact that "at the south-east angle, and at the Single Gate, we find the wall springing from the rock, with the faces nicely worked, while at the south-west angle, and for at least 213 feet to east of it, we find the stones up to a certain level with beautiful marginal drafts, but with rough picked faces."† There is no doubt that the older masonry of the south wall is of two if not three different periods, but the excavations do not enable us to say where one style of masonry ends and another commences. The "Great Course," as explained above, is possibly of late date; the shaft between the Double and Triple Gates did not reach the level of the rough-faced stones, and, in fact, the height of the rock at this point would not allow of their continuation so far to the east; the three courses which were uncovered correspond more nearly with those west of the Double Gate than with those at the south-east angle. At the Single Gate the wall was not seen, and the next shaft at the south-east angle shows a mixed style of masonry not found elsewhere.

The following view is put forward as a suggestion. The older masonry of the wall from Wilson's Arch to the Triple Gate belongs to one period of construction, and when it was built the south-east angle was standing as a separate tower, perhaps "the tower that lieth out," with sides about 105 feet long. At a later date, after the wall had been partially destroyed, there was a reconstruction, during which the

* For instance, the level of the bottom of course E, which corresponds with the bottom of the "Great Course," and the level of course H.

	Wilson's Arch.		Barclay's Gate.		S. W. Angle.		Shaft III.		Shaft II.	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
E. ...	2,381	3½	2,380	10¾	2,380	3½	2,380	7¼	2,380	0
H. ...	2,370	1½	2,369	9	2,369	5½	2,369	11½	2,369	7

	Shaft I.		Shaft between Double and Triple Gates.		S. E. Angle.	
	ft.	in.	ft.	in.	ft.	in.
E. ...	2,380	0¾	2,380	0	2,378	5¼
H. ...	2,369	8¾	2,369	0	2,367	5¼

† "Recovery of Jerusalem," p. 122.

interval between the Triple Gate and the outlying tower was filled up, the "Great Passage" being left as a sort of drain, and the "Great Course" laid* to mark at the same time the top of the hill and the floor of the vaults at the south-east angle.†

* Procopius, in describing the Mary Church of Justinian, says that the fourth part of the ground required for the building was wanting towards the south and east; the builders therefore laid out their foundations at the extremity of the sloping ground, and raised up a wall until they reached the pitch of the hill; above this they constructed a series of arched vaults, by means of which they raised the ground to the level of the rest of the enclosure. Procopius also speaks of the immense size of the stones and of the skill with which they were dressed. This describes exactly what is found at the south-east angle: solid masonry to the level of the top of the hill under the Triple Gate, then vaults to raise the level to that of the area, and the "Great Course" to mark the *end* of the solid masonry.

† The following are the principal levels along and near the south wall:—

General level of Haram area	2,420	feet.
Spring of Robinson's Arch	2,387·5	,,
Sill of Double and Triple Gates	2,380	,,
Bottom of "Great Course" and floor of Solomon's Stables	2,380	,,
Bottom of Great Course at south-east angle... ...	2,378·8	,,
Sill of Single Gate	2,376.5	,,
Top of rough masonry in Tyropœon	2,344	,,
Rock 90 feet east of south-west angle	2,290	,,
Rock 213 feet east of south-west angle	2,322·3	,,
Rock under Triple Gate	2,378	,,
Rock at south-east angle	2,277	,,
Rock 18 feet west of the south-east angle	2,298·8	,,
Rock in true bed of Kedron	2,171	,,